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THE HARMONY OF REAL FREE TRADE AND THE DISCORDS OF BRITISH FREE TRADE.

BY H. C. CAREY.

SOUND political economy tends to the production of harmony and peace among nations—of combination of action, prosperity, and equality, among men. Unsound political economy tends to the production of discord among nations, and of poverty and inequality among the people of whom they are composed, with constant tendency to the diminution of power to combine their actions for the accomplishment of any measures tending to the improvement of their common condition. If, therefore, it be desired to determine the claims to consideration of any system, *as a real free-trade one*, the test most proper to be adopted is that of its tendency to promote or to diminish the love of association and the power to associate; for every act of association is an act of trade, *and the more perfect the power to associate the larger must be the quantity of trade.*

Tried by this test, the British system is a failure. Denounced seventy years since by Adam Smith, the father of the *real* free-trade system, as tending to produce discord both at home and abroad, every day that has since elapsed has tended to prove the perfect accuracy of his views; and in now looking around us it is impossible we should fail to remark that the tendency to discord and depopulation is in the precise ratio of the influence exercised by the system now being palmed upon the world under the guise of "free trade," but having for its object the maintenance of the monopoly by Great Britain of the manufactures and trade of the world.

Of all the countries of Europe, Ireland has been the one most subjected to *British* free trade; and the result is seen in the constant war of races and of religions, the constant succession of agitations and attempts at revolution, and the extraordinary depopulation consequent upon famines and pestilences, the destruction of houses, and the expulsion of their occupants. In other countries such occurrences are usually the accompaniments of war, but here we find them in a time of profound peace; and they are accompanied by another fact, rarely observed elsewhere except in time of war, to wit: the forcible transfer of the land of the country, under a law passed for that express purpose, from the hands of its late owners to those of the bankers and merchants of England, the class of men in whose favor were passed the previous laws which compelled the people of Ireland to make all their exchanges with the world through the ports, and in the ships, and by the aid, of the merchants of England. Such are the blessings of *British* free trade. The land has been exhausted by the constant export of its products, and its owners have been ruined; and the English journals now inform us

that there is yet "Hope for Ireland," because of the formation of "an association of English capitalists, comprising Messrs. Baring and Messrs. Rothschild, with several of the largest English railway contractors, for the purpose of purchasing land in Ireland, and reselling or letting it in farms, thoroughly drained, fenced, and otherwise fitted for cultivation on the English model." By another journal we are informed, that among the people who are now about to profit by the depreciation in value of the land, consequent upon the annihilation of all power to bring the consumer to the side of the producer, is one who derives his whole means of subsistence and of speculation from the taxes paid by the poor people of England and of Ireland, as will be seen by the following paragraph:—

"A very influential company has been formed in England, at the head of which is represented to be Prince Albert, for the buying up of lands in Ireland. Their purchases are expected to be on a most extensive scale, and persons in their employment are now busied in obtaining information on the spot as to the position and value of various estates."

These journals omit to inform their readers what has become of the unfortunate owners of these lands, impoverished and ruined by the system that has built up the fortunes of the great bankers and contractors—the middlemen of England. The following paragraph, however, exhibits the manner in which *the many* are being driven from the land to make place for *the few* who desire to monopolize it:—

"The depopulation of the country progresses with rapid strides. Farms unoccupied, districts uninhabited, increase with a ratio which knows no cessation. . . . We never see a morning pass without a caravan of our countrymen and countrywomen arriving here, to pass away again on their route to that great republic which really seems destined to become the future home of our race. There is neither coach nor conveyance which enters Limerick on any day of the week, and Sunday is not an exception, which does not bear its quota toward the great sum which fills the multiplying emigrant-ships from every port with a western aspect, and leaves a large residuum in every town that affords a labor-market to the misery-stricken people of this land."—*Limerick Examiner.*

If we look to India we find a similar state of things. The large class of small landed proprietors has totally disappeared, and in the districts that have been longest subject to British rule, the courts in which British justice is administered have, says Mr. Macaulay, beggared all the rich men within their jurisdiction, and "*are now inactive for want of somebody to ruin.*" Mr. Macaulay is good British authority, for he describes only what he had witnessed on the spot. The productive power of that great country, with its hundred millions of people, is now in course of steady diminution, with corresponding diminution in the power to contribute towards the support of its government, which would now be bankrupt were it not that it enjoys at home *a monopoly* of the power to purchase opium from its subjects, yielding a revenue of sixteen millions of dollars,* and abroad *a monopoly* of the power to smuggle it into China, whose cities are battered down, whose men are de-

* The amount paid for opium, the price at which it was sold in Calcutta, and the profit, are thus given:—

	Disbursements.	Receipts.	Profit.
	Rupees.	*Rupees.*	*Rupees.*
1845–6,	7,757,742	29,610,660	22,051,918
1846–7,	7,331,137	30,702,904	22,871,757
1847–8,	10,558,767	23,625,153	13,066,386
1848–9,	10,826,500	34,930,270	24,103,775

We have here a profit of *twelve* millions of dollars upon an investment of *five* mil-

stroyed and whose women are outraged, that the domain of British free trade may be extended.

Look where we may throughout the British empire, it is the same. Scotland presents to view almost hundreds of thousands of people permanently almost at the starvation point, and dependent upon charity for the support even of existence, while whole counties are depopulated by the forcible expulsion of their inhabitants to make room for sheep, as being more profitable than men. England herself witnesses a constant succession of contests between the employers and the employed, the latter perpetually enfeebled in their efforts for the improvement of their condition by the influx of starving Irishmen ready to labor for little more than is required to find them food, and thus to furnish that "cheap labor" deemed by the *Times* so advantageous to "those who have money to spend." With each step in the progress of *British* free trade—the system so emphatically denounced by Adam Smith—there is, as was shown in our last, an increased tendency to the dispersion of British population, and emigration has now attained to such a point as to have become a cause of serious uneasiness to the reflecting people of England. Almost since the days of Malthus have the writers of that country attributed its vast extent of pauperism to what they have been pleased to style overpopulation, but it has only been within the last twenty years that there has existed an almost universal desire for the compulsory emigration of its people. During that time the press has teemed with suggestions as to the mode by which population might most cheaply be expelled—by which sons and daughters could most advantageously be made to desert parents, and by which men, women, and children could most certainly be induced to fly from the homes of their youth, to seek, in the wilds of Canada or of Southern Africa, of New-Holland or New-Zealand, the food and clothing denied to them at home; but of all the numerous modes suggested, none was cheap enough to conciliate public favor. The numbers of the people of the British islands might therefore have continued to increase but for the recent determination to sacrifice British agriculture to the insane desire to be "the workshop of the world." The substitution of foreign for domestic land and labor in the raising of food has now accomplished the object so long and so much desired, and henceforth, apparently, Great Britain is destined to diminish in wealth and population, the natural consequence of the maintenance and extension of the system described by Adam Smith as tending inevitably to diminution in the profits of capital and in the reward of labor. Believing that the following remarks of the London *Times*, upon the state of things now being witnessed throughout the whole extent of the British islands, may have interest for the readers of this journal, I give the following extracts from one of its most recent articles:—

"What has appeared to be the extraordinary emigration of the last five years continues unabated, and promises—or shall we rather say threatens?—to be the permanent drain of the British population. . . . Every where we are told the farmers are flitting with the produce of their crops, and the laborers with their wages for harvest work.

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lions, and this profit is realized in the name of free trade! At Bombay, the revenue from this source was as follows:—

	Rupees.
1845-6,	6,180,157
1846-7,	6,108,418
1847-8,	4,140,800
1848-9,	8,732,800

Total revenue derived *in India* from the power to demoralize and poison the people of China, about sixteen millions of dollars.

Employers have been forced to pay this year a trifle more than heretofore; and it now appears that, so far from this proving a temptation to remain at home, it will only increase the difficulty next year. Though this is the most unfavorable season of the year for emigration, the terrors of a stormy passage and an American winter seem to be lost on people who feel that no ocean or soil can ever be so inhospitable as that which has given them birth. The railways are loaded with emigrants, who, on their arrival at the port, race to the ship as if flying for their lives."

Every where the farmers and laborers are thus flying from the realm of *British* free trade, and the only effect of increased wages consequent upon a diminished abundance of hands, is that of increasing the ability to gratify the desire to leave the land that was to be enriched by the monopoly of the trade and manufactures of the world sought by the Manchester political economists, and for obtaining which they made the sacrifice of those engaged in the production of commodities to be exchanged or manufactured. The *Times* continues:—

"Should this emigration continue at the same rate for the next twenty years, it cannot but have important effects on this country. As it happens, the number happens almost exactly to tally with the natural increase of our population, so that a continued drain to this amount, and no more, would leave our population at a stand. Such a result, it might be supposed, is both natural and desirable. For a long time it has been firmly believed that we labor under a redundance of population, and that in one island at least we could well dispense with very large masses. Accordingly emigration, even to its present unprecedented amount, has been hailed as the very remedy our condition requires. Nothing is more likely, however, than that the experience of an opposite state of things—such an experience, in fact, as that we are now likely to have—may disabuse us of this idea, and may prove that a country such as ours requires what is called a redundant population. An inexhaustible supply of cheap labor has so long been a condition of our social system, whether in town or in country, whether for work or for pleasure, that it remains to be seen whether a great enhancement of labor would not disturb our industrial, and even our political arrangements, to a serious extent. *Two men have been after one master so long, that we are not prepared for the day when two masters will be after one man,* for it is not certain either that the masters can carry on their business, or that the men will comport themselves properly under the new *régime*. . . . Commercial enterprise and social development require an actually increasing population, and also that the increase shall be in the most serviceable, that is, the laborious part of the population, *for otherwise it will not be sufficiently at the command of capital* and skill. These considerations assume no little gravity with the prospect before us; when we are threatened with a population, not increasing, perhaps even diminishing in the aggregate, while the most useful, that is, the working class, is continually becoming less numerous, compared with the rest. Doubtless, a limited supply of labor may be met to a very great extent by the many new inventions for economizing it; but it is scarcely credible that a country which has enjoyed so long a superabundance of labor, should be able at once, without inconvenience, to adapt itself to a totally different state of things. *Man has not had his proper value in these islands for the last half century. It may be for the ensuing half century to correct, perhaps very emphatically, the error of the past.*"

The whole tendency of the British system has been that of rendering labor superabundant, and thus causing "two men to be constantly seeking one master." It is here, as we see, apprehended that any change in the state of things by which labor shall be less controlled by capital, and "two masters will have to seek one man," will prevent the masters from carrying on their business as they have heretofore done, because they will be then no longer able to underwork the serfs of Russia or the wretched natives of Hindostan. "The condition of the existence" of the British "social system" has been, we are told, "an inexhaustible supply of cheap labor," that is, an inexhaustible supply of men who were willing to work for little more than was necessary to support existence, while the Peels, the Barings, the Rothschilds, the Hudsons, the "great railway contractors," and the whole race of middlemen, were accumulating immense fortunes, to be expended in the purchase of the properties of the smaller land-owners,

most of whom have disappeared from England, as they have also done from Ireland and from India; and with each step in the accumulation of land in fewer hands, labor has been less in demand, with a constantly increasing tendency to have "two men seeking one master." With every day of the existence of the present system of policy that tendency increases, and with every day there is increased tendency to the dispersion of the people of the British islands, the most conclusive proof that could be offered of the unsoundness of the system denounced by Adam Smith, yet continued to the present hour, spite of his solemn admonition as to the consequences that must inevitably result from the attempt to obtain a monopoly of the trade and manufactures of the world.

The tendency of emigration is clearly that of transplanting a portion of the people of Europe to a country in which they will experience an improvement in their condition; and if the transplantation of a portion tends, as is apprehended by the *Times*, to cause "two masters to be seeking one man," will not the people of this country, by extending here the market for labor, be aiding in the improvement of the social and political condition of the whole people of Europe? It is well known that the domestic production of iron in 1847 was greater by 600,000 tons than it was in 1842, and the value of this, in the various forms in which it was consumed, could not have been less than $100 per ton, making the total value sixty millions of dollars, every dollar of which went for the payment of labor employed in opening mines, building furnaces, mining coal and ore, refining iron and converting it into railroad bars, axes, ploughs, shovels, nails, &c. If now to this we add the labor that was required for building mills and for constructing the machinery required for converting into cloth the vast *additional* quantity of cotton and sheep's wool worked up in 1846 and '47, and the labor required for tending that machinery, we shall readily arrive at an *additional* hundred millions of dollars paid in each of those years for the labor so employed; and had the production of iron and of cotton been permitted to grow undisturbed, those branches of manufacture would now involve the annual payment of *at least two hundred millions more than was paid eight years since.* Unfortunately, the course of events has been widely different. Our consumption of cotton and woollen cloth, and of iron, has receded to where it stood in 1845, notwithstanding an addition to the population of more than twenty per cent.; and with this recession there has been a diminution in the demand for labor, the effect of which is seen in the fact that great numbers of unfortunate immigrants, after having incurred the expense of coming to this country, deem it more advantageous to return, even to Ireland, than to remain, exhausted and impoverished, in the Union. The following paragraph is taken from one of the journals of the day on which I write:—

"Going Back.—Nearly two hundred steerage passengers, who had recently immigrated to this country, sailed for Liverpool from New-York on Friday in the ship Ashburton. It is said the owners were unable to accommodate about fifty others who applied for passage."

To raise the condition of man throughout Europe it is needed only that we pursue that course which will enable us to obtain large supplies of cotton and woollen cloth and iron, and that is to be done only by bringing the producer of iron and cloth to take his place by the side of the producer of food and wool—thus making a market for the labor of Europe, and by the same operation making a market on our land for the products of the land. Is it not then on every account desirable that we should return to the system that enabled us so largely to increase our consumption of cloth and iron during the

period from 1843 to 1847? Shall we not, by adopting this course, do much towards the establishment of harmony and prosperity among ourselves, and towards the elevation of man throughout the world? Is not this *the truly democratic* course of policy?

Parties, however, differ in opinion on this subject. The planter of South Carolina insists that by adopting a policy that looks to bringing the spindle and the loom to take their place among his own cotton-fields, he is taxing himself for the benefit of his fellow-citizens of the Northern States, and when he builds a mill he rejoices in the idea that he is thereby inflicting injury upon some of those who have thus far been perhaps the best of all his customers. The Virginian who finds himself and his plantation impoverished by reason of having made no market on the land for its products, insists that the true cause of difficulty is to be found in the fact that he is compelled to make his exchanges through Northern cities, and he determines to have direct trade with England, not so much because of the benefit to himself as because he will thereby be enabled to injure others. Such is the effect every where of the British monopoly that is now attempted to be sustained under the name of "free trade!" It is every where productive of discord and hate, and every where it is opposed to any increase of the habit of voluntary association among men for the improvement of their condition, either moral or material. As a specimen of the state of feeling engendered by the system which looks to the exhaustion of the land and the flight of its owners to new lands, to be in their turn exhausted, the following article is given from one of the journals of the day:—

DIRECT TRADE BETWEEN EUROPE AND THE SOUTH.

"A convention has recently been held in Richmond, to consider the subject of direct trade with Europe and the construction of a system of railways through the Southern States, similar to the one in the New-England States, and commensurate with the growing population of the South. Mr. Van Lennep, a special agent of the merchants of Amsterdam, was present at the convention, and will leave for Europe next Wednesday for the purpose of completing the arrangements tendered to the South in the way of moneyed and commercial facilities. His mission will extend, among other things, to ascertaining what amount of capital can be obtained from Holland to be employed in the construction of steamers to run in this trade; also to find out what may be proper to promote emigration to our shores, and what may be the probable number of passengers, including those from Germany and Switzerland, that will require transportation in the next few years. In addition to such information, Mr. Van Lennep's attention will be particularly directed to the most practicable means of combining the manufacturing interests in the interior of the European states, especially those between the Rhine and the Elbe, with a view to a coöperation with the producing interests on this side of the Atlantic; or, in other words, what is needed to place the commercial and consuming, the agricultural and manufacturing, interests of the two continents in the cheapest and most direct communication, avoiding all the unnecessary impediments which are the result of the present indirect, circuitous, and expensive trade. It is in contemplation also to take immediate steps, which will be aided by Mr. Van Lennep, to open credits in Holland, through proper agencies in this country, (commercial houses and banks,) by which means actual and available capital, properly distributed, will enter, in the ordinary way, into competition for the trade and productions of the South.

"Thus it will be seen that the South has commenced moving in earnest for the purpose of cutting off her connection with the commercial and manufacturing interests of the North, and establishing a direct communication with those countries of Europe which are the chief consumers of her products. This object completed, and *what will become of the cotton mills of New-England?* Will not Othello's occupation be gone? We cannot raise cotton at the North, but they can manufacture it at the South, as has already been demonstrated, and it now looks as if they will soon be able to find a market for all their surplus materials elsewhere than at the North.

"*The manufacture of cotton yarns is now rapidly extending in Georgia, Alabama, and Tennessee.* These yarns constitute an immense item in the profits made by Great Britain

out of Belgium, Holland, France, and Germany. They are destined soon to be divided more equitably between the producers in the United States and the consumers in Europe.

"'This,' says the *Washington Union*, 'will be the inevitable effect of the direct trade from the southern Atlantic ports to those of Europe; and another of the achievements of this trade will be the extension of cotton as an article of consumption; for *it can scarcely be doubted that the profits taken from England, increasing the capacity of the continental states to buy from us*, will introduce such changes in their tariffs as will enable their laborers to clothe themselves in cotton, and give us in return the more costly products of linen and silk, and the mixtures of those articles. At present these tariffs are, as a general rule, so framed as to prevent the importation of our low-priced cotton goods, the manufacturer preferring to take the twist at a high duty rather than risk a competition with English capital, when there are no certainties that a direct exchange with America can be established. *What the cotton producer desires is the increase of the number of human beings that can be clothed with the manufacture of this article;* and *nothing can do this but to lessen the obstructions which are interposed by nature or by art to a direct exchange of this manufacture for that which is produced by the labor of these human beings.*'

"The repeated insults heaped upon the South by the hot heads of the North has at length aroused the Southerners to a true sense of their own interests. They have the whip in their own hands, and the Northerners will soon learn that they know how to use it. A judicious system of internal improvement, in connection with a direct European trade, will just settle the matter for all time; and to show that the Southerners do really mean what they say about this affair, we wish to call the attention of Northerners to the fact that the Richmond convention is not the end of the movement toward the independence of the South, for another convention on the same subject is to be held in Macon, Ga., on the 27th of October next, at which time they will undoubtedly have received the necessary information from Mr. Van Lennep to enable them to shape their future course, if not to place the whole thing in a suitable condition for immediate consummation.

"Is there any one so blind as not to see that *the consequences of this movement will be most disastrous to the commercial and manufacturing interests of the North?* Does any one believe that Northern agitation of the slavery question has had nothing to do toward hastening the consummation so justly to be dreaded by the business men of the North? And yet even now, when inevitable ruin is hanging over the heads of thousands, the curs of the *humane* abolition party cannot cease their snarling and yelping—more white victims must be offered up as a sacrifice on the unholy altars of their hellish doctrines. The truth is, the North has bitten off its own head, and now, not content with the result, actually persists in gnawing the neck down to the very vitals."

It is here proposed to establish direct intercourse with some of the nations of Europe; and with which of them is it that the planters of Virginia and of the South generally are thus anxious to enter into connection? Is it with free-trade Ireland? Certainly not. She is utterly ruined. With Portugal, so long the mere colony of Great Britain? Certainly not. With Spain, filled as it is with goods smuggled, on free-trade principles, through Gibraltar and through Portugal? With Italy, that grants to England a monopoly of the supply of cotton goods? Or with Turkey, the favored land of British free trade, in which protection to manufactures is quite unknown? With none of these is it, but *with those countries, and those only, that have adopted protection as the true and only means by which to reach freedom of trade*, it is that our Southern brethren desire to have more intimate commercial relations. They desire to trade with Belgium, described in a work before me as "*the very paradise of protection*,"—the country in which flax land yields more rent than would purchase the fee of four times the quantity of good cotton land; and the country that, by reason of making a market on the land, and being thus enabled to return to it the manure yielded by its products, has become, from being little more than a sandhill, the most fertile country in Europe; while Ohio, by pursuing an opposite course, has been falling from an average of more than twenty bushels of wheat to the acre to one of little more than ten, with daily tendency to decline, as the farmer sells off his soil in the

form of wheat, and returns to the land no portion of the elements with which it has parted.

They desire too to trade with Germany, which, *until the adoption of protection in* 1835, consumed less cotton in proportion to its population than almost any country of Europe. The imports of raw cotton into Prussia before the formation of the tariff-league or *Zoll-Verein* remained from 1827 to 1835 stationary at 44,000 cwts. per annum. That of yarn increased from 1823 to 1835, from 61,000 to 115,000 cwts. The total growth of consumption in twelve years was but 15,000 bales. The following shows the growth from that period in the territories of the confederation :—

	1836.	Average from 1837 to 1841.	1843.	1845.
Raw cotton, quintals, - -	152,364	200,093	306,731	443,887
Cotton twist and wadding, do.,	244,869	351,884	475,564	574,303
	397,233	551,977	782,295	1,018,290

The quantity had thus increased 150 per cent., and the home consumption had increased about 75 per cent., in a period during most part of which our own consumption had remained stationary.* The quantity of twist and wadding imported from Great Britain had increased 135 per cent. in a shorter period than was required in the latter for an increase in her home and foreign consumption of only 21 per cent. The power to import thus grew with the power of production at home.

They desire to trade with Germany, emphatically the land of protection.

Says a recent writer, "Let any one, before the late struggles, have visited the countries embraced in the *Zoll-Verein*. To say that protection has there *produced* manufacturing prosperity, would be to beg the question; but one thing is certain, that exactly *coincident in time and place* with the most stringent protective laws has arisen a manufacturing industry and production of wealth without an approach to parallel in all the former history of Germany. On every side are seen rising mills, factories, workshops, warehouses, teeming with an industrious and busy population; *and so far from agriculture being neglected, it never made more rapid progress*, to say nothing of the mining and metallurgical industry which has also received the most astonishing impetus."

But recently, nearly all the cloth consumed in Germany was supplied by England. Now, Germany undersells England in the markets of the world, *because protection has enabled her to effect on the spot, and without loss by transportation, the combination of the food and the wool, fitting both for cheap conveyance to distant markets.* But recently, all the hardware consumed in Germany was supplied by England. Now, Germany undersells England in the market of England itself, because she combines her cheap food with her own ore, also the produce of cheap food, and sends the two abroad in the form prescribed by Adam Smith in the following passage, to the careful perusal of which I desire most particularly to call the attention of such of my readers as desire fully to understand how it is that the farmer and planter are to be enriched by making a market on the land for all the products of the land :—

"An inland country, naturally fertile and easily cultivated, produces a great surplus

* The increase of consumption after the formation of the Union was very rapid. As early as 1838, it was said that "The cotton manufacture of Saxony had already become of twice the extent it had reached before the Union." The quantity of cotton hosiery made in Saxony has increased immensely of late, and from its cheapness has not only secured the monopoly of the markets of the Union, but has also been shipped largely to the United States.

of provisions beyond what is necessary for maintaining the cultivators; and on account of the expense of land carriage, and inconveniency of river navigation, it may frequently be difficult to send this surplus abroad. Abundance, therefore, renders provisions cheap, and encourages a great number of workmen to settle in the neighborhood, who find that *their industry can there procure them more of the necessaries and conveniences of life than in other places. They work up the materials of manufacture which the land produces, and exchange their finished worl, or, what is the same thing, the price of it, for more materials and provisions.* They give a new value to the surplus part of the rude produce, by saving the expense of carrying it to the water side, or to some distant market; and they furnish the cultivators with something in exchange for it, that is either useful or agreeable to them, upon easier terms than they could have obtained it before.

"The cultivators get a better price for their surplus produce, and can purchase cheaper other conveniences which they have occasion for. *They are thus both encouraged and enabled to increase their surplus produce by a further improvement and better cultivation of the land; and as the fertility of the land has given birth to the manufacture, so the progress of the manufacture reacts upon the land, and increases still further its fertility.* The manufacturers first supply the neighborhood, and afterward, as their work improves and refines, more distant markets. For though neither the rude produce, nor even the coarse manufacture, could, without the greatest difficulty, support the expense of a considerable land carriage, the refined and improved manufacture easily may. *In a small bulk it frequently contains the price of a great quantity of the raw produce. A piece of fine cloth, for example, which weighs only eighty pounds, contains in it the price not only of eighty pounds of wool, but sometimes of several thousand weight of corn, the maintenance of the different working people, and of their immediate employers.* The corn which could with difficulty have been carried abroad in its own shape, is in this manner virtually exported in that of the complete manufacture, and *may easily be sent to the remotest corners of the world.*"

Such is the policy of Germany, and therefore it is that the South now seeks to establish with that country a direct trade. Were the *Zoll-Verein* now to be dissolved, were protection to be abolished, and were England to be enabled to resume her monopoly of the supply of Germany with cloth and iron, would there be any desire to establish this trade? Assuredly not. The consumption of cotton would dwindle down to the point at which it stood in 1835; and it would do so because the farmers of the country would be compelled to seek at a distance the market they have now at hand, *and upon them would fall the cost of transportation.*

A great effort is now, as we see, to be made by the South, and what is the object that is to be accomplished? That of "lessening the obstructions which are interposed," and which now prevent "a direct exchange" between the producer of cotton and the consumer of cotton. How is that object to be accomplished? Is it not dispensing with the services of the merchants and manufacturers of England, the middlemen who now live at the cost of the producers here and the consumers of Germany, producing nothing themselves, and establishing a trade that shall be free from the numberless exactions of these middlemen? The work done, as at no distant time it will be done, there will have been made a great step towards freedom of trade, and *that step will have been a direct consequence of the adoption of protection by Germany*, with a view to the demolition of the British monopoly system. *German* free trade tends therefore to the emancipation of trade from the exactions of England—from the payment of taxes that she is enabled to levy by means of compelling the people of the world to make all their exchanges in her markets and in her workshops. Such, likewise, was the object of *American* free trade as established by the tariff of 1842, the effect of which was precisely that desired to be attained by the measure described in the article now before us. It "lessened the obstructions" to exchanges between the producers of food and cotton. Instead of exchanging by the circuitous route of Liverpool and Manchester, they exchanged at the nearer markets of Providence and Lowell,

and with every day there was a tendency towards bringing the place of exchange nearer to the cotton-fields; the effect of which was seen in the growth of domestic consumption from 267,000 bales to 631,000, while the effect of the tariff of 1846, in increasing the distance between the producers and the consumers of cotton, is manifested in the reduction of consumption from 631,000 to 464,000 bales; and yet the very people who have thus augmented "obstructions" at home are those that profess themselves most anxious to diminish them abroad!

"What the cotton producer desires," we are here told, "is the increase in the number of human beings that can be clothed with this article;" but that is, as I conceive, a most erroneous view of the true object to be sought by the planter. A million of Irishmen at home do not consume as much cotton as do a hundred thousand when transplanted to this country, because at home their labor is valueless, and here it is valuable. The planter, therefore, profits largely by making here a market for Irish labor. Twenty-four millions of our own people do not consume under the tariff of 1846 as much as twenty millions consumed under the tariff of 1842. The "number of human beings" has been increased, but the larger number are poorer customers to the planter than was the smaller one. He therefore loses heavily by diminishing the market for American labor. What he should desire would be to increase the productive power of the "human beings" that would desire to be "clothed with this article," and thereby increasing their power of consumption; and that was what was being accomplished under the tariff of 1842, when the consumption of cotton goods increased thrice more rapidly than the population, and would have so continued to increase to this hour, had he not sacrificed the great and rapidly increasing domestic market, in the vain hope of obtaining a substitute abroad. In that he has failed, and he now seeks direct intercourse with Germany, hoping there to sell cotton cloth instead of cotton, in defiance of Mr. Walker's views as to the advantage to be derived from employing low-priced foreign labor in place of the high-priced labor at home.

Direct intercourse will at some period be established, but can it now be done? Is it possible for any purely agricultural community to maintain direct intercourse with Europe, *unless their efforts to accomplish that object be accompanied with restrictions on intercourse by other channels?* I doubt it much. Canada has the St. Lawrence, the navigation of which has been improved at vast expense, and yet the most valuable part of her trade is carried on through New-York; and it is so *because protection makes a market in the Union for the surplus labor of Europe, and for the raw materials of other parts of the world, and thus provides large return cargoes, which pay almost the whole freight out and home, the consequence of which is that outward freights are so low as to defy competition.* But for this, the flour and the cotton would pay nearly the whole of the double freight, as is now the case with the rice and the cotton of India. Again, the purely agricultural community has to pay all the cost of transportation upon its whole product, and the consequence of this is that the amount left to the producer, after paying freights, commissions, &c., is so small as to leave little to be applied to the purchase of cloth or iron, and therefore the return freights of merchandise are very small, while there is no freight of passengers or of raw materials; and every circumstance that diminishes the quantity of inward freights increases the amount to be paid on outward ones. Transportation is the first tax to be paid by land and labor; and while the people of the South will continue to insist upon rejecting the advice of Adam Smith, and upon sending their commodi-

ties to market in the most bulky form, they will have, I think, to follow the example of the Canadians in maintaining an indirect intercourse with the world of Europe. The more perfectly those commodities can be fitted for consumption the larger will be the inward freights and the smaller the outward ones, and with every step in that direction they will find increased facility in maintaining direct trade with Europe and with the world at large, because with each such step their productive powers will increase, and therewith there will be an increase of wealth and of the power to consume the products of other lands, while consuming more of their own, and obtaining better prices for what they have to sell. The surest way then to obtain direct intercourse is to unite with their fellow-citizens in other portions of the Union in the effort to annihilate the monopoly of machinery fastened upon the world by Great Britain, the object sought to be accomplished by the tariff of 1842, and the accomplishment of which is the indispensable preliminary to the establishment of freedom of trade.

How small is now the tendency towards dispensing with the ships of the North in the transport of Southern products, may be seen by the following facts. In the two years from 1848 to 1850, the increase in the total tonnage of the Union was 381,000 tons, and of this but 18,000 tons could be found in the four principal Southern States, Virginia, North and South Carolina, and Georgia, with a territory of 195,000 square miles, being more than that of all the Atlantic States north of them; and the registered tonnage had decreased instead of increasing, as is here shown:—

	Registered.	Enrolled and licensed.
1847-8, - - - - - - -	61,677	97,341
1849-50, - - - - - - -	61,024	116,007
Decrease, - - -	657	Increase, 18,666

What is the tendency of things at the South is clearly shown in the statements published in our last respecting the decline in the trade of New-Orleans.* The tendency at the North has been for most of the past ten years towards an increased density of population, and each step in that direction is accompanied by increased facility for making roads and canals, by aid of which the West and South-west can communicate with Europe through the cities of the North more advantageously than by means of the ports of the Gulf of Mexico, while the demand at the North for laborers and for raw materials of every kind provides large return freights, the effect of which is so greatly to diminish outward ones as to give to Northern ports and Northern ships advantages that cannot be enjoyed by Southern ones; and while that state of things shall continue, all attempts at direct trade must result in failure, *a thing that is to be regretted by all—both North and South.*

It is, I repeat, greatly to be regretted by the North that the South can not and will not place itself in a position to have direct trade with the world. It cannot do this while it shall continue exclusively agricultural, but it will be able to do this whenever it shall have turned to account its now waste labor, and made a market on the land for the products of which so large a portion is now wasted; for when it shall have protected its planters in their efforts to bring the loom and the anvil to take their natural places by the side of the food and the cotton, the fuel and the ore, it will need large quantities of the products of other lands, and then it will have large and valuable return cargoes, which now it cannot have.

* See page 267.

We are told, however, that "the manufacture of cotton yarns is now rapidly extending in Georgia, Alabama, and Tennessee." How far this is true may be judged from the fact, that the consumption of cotton in the States south of Virginia, which grew, during the existence and under the influence of the tariff of 1842, to *one hundred and ten thousand bales*, has now fallen to *sixty thousand bales;* and in Virginia and Maryland the per centage of diminution has been, I believe, much greater. The competition of the South with the North grew under protection, and *it tends to disappear as protection is withdrawn*, as any one may satisfy himself who will inquire what are the prospects of the suspended mills of Maryland and Virginia as compared with those of similar mills in Rhode Island and Massachusetts. The question is likely, as I think, to be, not "What has become of the cotton mills of New-England?" but "What what has become of those of the Southern and Western States?"—for *the direct tendency of the present policy is that of placing the producer of cotton more and more at the mercy of those who possess the machinery by which it is to be converted into cloth.* Had the tariff of 1842 been permitted to remain in existence, the mills of Lowell and Providence would by this time have almost abandoned to the South the production of coarse cloths, and the South and West would now be purchasing fine ones made at Lowell and Providence with coarse ones made in their own cotton-fields, and all would now be flourishing together, thus proving the perfect harmony of interests resulting from the adoption of that American system which looks to protection as the sure, the profitable, the speedy, and indeed the only means of arriving at perfect freedom of trade.

The "profits taken from England" will, we are here told, increase "the capacity of the continental States to buy from us," and yet the same persons who tell us this are daily employed in assuring us that our own capacity to purchase increases as we add to the profits of England by sending to her our food and our cotton to be exchanged for cloth and iron; and this they say in the face of the fact, that the consumption of iron and of cotton and woollen cloth, domestic and foreign, has fallen to the level of that of 1845–6, notwithstanding the vast increase of population. That reduction has taken place under the tariff of 1846, and instead of the two sections of the Union working together for mutual benefit, the one producing yarns and coarse cloths requiring little labor for their manufacture, and the other producing finer ones requiring more labor, each thus making a market for the products of the other, both are seen contending for the market afforded by coarse cloths, and both destroying each other—a natural consequence of the adoption of the *British* free-trade system which looks to subjecting the planters and farmers of the world to the will of the owners of *a quantity of machinery, the whole value of which in Great Britain and the United States is not equal to one year's loss to our own farmers and planters from the want of a market on the land for its products.* In this contest the South is being worsted, as is obvious from the fact that the Southern and Western consumption of cotton has fallen in a single year almost one half; and yet under these circumstances it is that it is supposed that that portion of the Union is to be benefited by an alteration of the tariff of Germany such as shall secure the free admission of coarse Southern cloths in exchange for the finer ones produced in Germany! They drive Lowell from the production of fine cloths, and thus produce a state of things that destroys their own manufacture of coarse ones, and then look abroad for a market for cloths that they are ceasing to produce! It is surely time that the planter should open his eyes to the fact that his interests and those of his fellow-citizens are the same, and that he cannot profit by a

system that is destroying the power to consume his great staple. Had he permitted the cotton manufacture to go ahead, the cloth that would this day be required in the Union for the consumption of its people would be absorbing little short of a million of bales, and to those who doubt this fact, I would recommend an examination of the fact that the consumption of cotton, *per head*, almost doubled in amount from 1843 to 1847, and that at the close of the period subject to the tariff of 1842 the tendency to increase was far greater than it had ever been, because the production of cloth, and iron, and fuel, and of a thousand other commodities to be given in exchange for cotton, was increasing with a rapidity totally unexampled. The farmer or planter must be blind that supposes his interests likely to be benefited by any system of policy that diminishes the demand for his products, and that diminution is the inevitable consequence of any system like that of '46, the tendency of which is to increase the distance between the consumer and the producer. Equally blind must be the man who fails to see that the true interests of the North and the South, the East and the West, are in perfect harmony with each other. *British* free trade seeks to increase the volume of agricultural products seeking to pass to the consumer through the ships and mills of Britain, thereby enabling the owner of British ships and mills to enrich themselves at the expense of the farmers and planters of the world. *American* free trade seeks to diminish the volume and increase the value of agricultural products fitted for direct exchange with the consumer of the world at large, thus diminishing the power of Britain to support herself by the taxation of the farmers and planters of the world. And it is to the adoption of this system that the South is to look for the power of establishing and maintaining direct intercourse.

AGRICULTURE OF NOTTINGHAMSHIRE, ENGLAND.

[*Concluded.*]

ARTIFICIAL MANURES.

Bones may be considered after farm-yard manure to stand next in estimation for light soils, and on them the farmer chiefly relies. They are used principally for the turnip crop, in quantity from twelve to twenty bushels an acre. They are mixed generally with a proportion of rape-cake or guano, and are found far more efficacious when their latent properties are thus, stimulated.

Rape-cake is also used for the turnip crop to a great extent, as well as for wheat, in quantity from 5 to 7 cwts. to the acre. It is, when applied for wheat, mostly sown by the hand on the pressed furrow, and harrowed in at the same time with the seed. Some prefer to apply it in the spring as a top-dressing, and hold the opinion that a less quantity laid on then is equal to a greater applied in the previous autumn.

Shoddy has been much in demand for some years past, and has proved itself a most valuable manure. For the information of those who may not be acquainted with it, we may observe that it is the waste from woollen cloth mills, which is saturated with an oily matter, and is more lasting in its effects than most artificial manures. In price it varies according to quality from 40*s*. to 45*s*. a ton. It is used both for turnips and wheat. Not less than a ton an acre should be applied, as it is difficult to separate, and consequently to

spread equally over the land. Its virtues are not exhausted in less than two, or even three years, from its decomposing slowly.

Guano was used very generally last year for the turnip crop, in small quantities, by way of experiment; but the summer being very dry it failed; if another trial were made we cannot say precisely what the result would be. It is unquestionably a powerful manure when pure, but we fear is very liable to be adulterated. The African has been chiefly used in these districts. Another year's trial will go far to determine its value, and fix its future price.

Nitrate of soda was used some years ago, but from its discontinuance we presume that the popularity which at one time it was likely to acquire is on the wane, if its fate be not already sealed.

Soot is much liked as a top-dressing for wheat in the spring, applied at the rate of 5 quarters an acre; it may be bought at Sheffield for 2*s.* 6*d.* a quarter, forming a cheap and very remunerative manure.

On the true value of lime as a manure opinion is not so unanimous as would appear desirable. By some good farmers it is regarded as essentially necessary; whilst by others of equal spirit and enterprise it is altogether neglected.

The aid of science is wanted to ascertain the relative value of lime brought from various quarries in Yorkshire and Derbyshire—both of which kinds are in common use in these districts. The Yorkshire lime brought from Brotherton and Knottingley was held by Mr. Lucas, at the late meeting of the "British Association for the Advancement of Science" at York, to be next in value to the mountain limestone of that county, from its containing the next largest amount, namely, 93½ per cent., of carbonate of lime, and comparatively little of the carbonate of magnesia. Of this lime, as much as 120 or 150 bushels an acre is often applied at a dressing, and even more, and it is found to answer well; whilst of some of the Derbyshire lime, also in general use, not more than 60 or 70 bushels can be applied without positive injury being sustained for years afterwards.

It is necessary to observe, that the Derbyshire lime here alluded to is not the mountain limestone of that county, which is equally valuable to the farmer with the mountain limestone of Yorkshire, and most valuable for agricultural purposes, being said to contain 98½ per cent. of pure carbonate of lime; but it is a limestone highly impregnated with magnesia, and identical with the magnesian lime of Yorkshire, which is said to contain of carbonate of lime only 62½ per cent., and of carbonate of magnesia 36¾ per cent.; and by Mr. Lucas's statement, therefore, of proportionately less value.

An idea exists in the minds of many practical men, which we think an erroneous one, that if two tons an acre of the same Derbyshire magnesian lime be applied, as good a purpose will be answered as if four tons from Knottingley be used, but that it is dangerous, indeed highly prejudicial to the land, to put on more than two tons at one dressing.

There must surely be a great mistake in this, for if carbonate of lime be the valuable constituent, and carbonate of magnesia a baneful one, a very different conclusion must be come to. Let us see how the relative proportions of these in the two dressings stand as they are mostly applied. The four tons of Knottingley lime will contain of valuable matter 93½ per cent. each, 374 parts, whilst the two tons of Derbyshire will contain at 62½ per cent. only 125 parts, or nearly two thirds less; whilst of baneful matter the Knottingley will have but 24 parts at 6 per cent. per ton, and the Derbyshire at 36¾ per cent. 73½, or two thirds more: a reason sufficient to account for

the injurious effects which are visible after a heavy dressing of the latter, and one which is worthy the attention of those who are interested.

It has been replied by those who favor the use of the Derbyshire lime, that the advantage to be derived from any lime, as a manure, consists in its acting as a solvent rather than in its fructifying property; and that if a smaller quantity of magnesian lime contain the requisite amount of such solvent quality, it is needless to go to greater expense in the purchase of lime of another kind. But this reply does not explain the fact of so small an increased quantity of the magnesian lime producing effects decidedly injurious, and such as cannot result from a solvent in whatever quantity applied; whereas by the principle held by Mr. Lucas, they are fully accounted for: and it appears from statements made by him to be established that the true value of any lime consists in the comparatively large amount it contains of carbonate of lime in proportion to that of carbonate of magnesia, and that the more of the latter constituent is possessed by such lime, the less valuable it will be to the farmer.

IMPLEMENTS.

Every farmer now has his own threshing-machine either fixed or portable, or he hires one by the day, and the bulk of the corn is so threshed. Experience has taught him that he can not only thresh out his grain by machinery at less expense than by the flail, but that the condition of the grain is thereby better preserved, whilst the saving leaves him a surplus fund to spend on other necessary work of his farm. Where there is a fixed machine, as on most of the large farms, a provision is made for cutting chaff, by a strap attached to the threshing-machine, when required, which effects a great saving in labor.

It has been noticed that the common swing plough is in general use, and it is doubtful whether a better could be substituted, at least on the light soils, where the ploughing is, as a whole, admirably performed. On the heavy soils, perhaps, at certain seasons when the land becomes very dry and hard, some of the improved wheel ploughs might be brought with advantage into further use, from the greater power they possess.

"Ducie's drag," or the "Uley cultivator," and various others made in the different localities, are generally employed, especially on the light soils. The harrows have mostly the frame of wood; some few, however, are of iron. Whichever kind may be used, they are found more efficient on strong land when coupled together; but on working out the quitch on the light soils are better separate.

Horse-hoes are used of various kinds adapted to the soil. The Scotch is among the best for heavy land, the shares of which act on the same principle as those of the cultivator. The advantage they have over the common horse-hoe consists in going deeper, and bringing, by the forward inclination of the shares, the weeds effectually to the surface. They are, however, heavier than necessary for light land, where slighter ones are more convenient.

For sowing turnips on ridges the Northumberland drill is by far the most common, doing a single ridge at a time, with a separate box for artificial manures, which are deposited by a separate spout below the seed, so as to occasion no injury to it. The corn-drills are on the same principle as the large Suffolk drill, capable of drilling with great nicety 10 or 15 statute acres a day; and, by introducing a change of cups, will deposit seed of every size from the turnip to the bean.

Crosskill's clod-crusher is an invaluable implement for strong land, but too expensive for farmers in general to purchase. A public one in each parish

might answer every necessary purpose, and would cost but a trifle to each individual. It has been found of great service on clover-ley wheat in the spring when threatened with the grub. Where, however, the land is very light, it should be previously rolled with a common light roller, otherwise there is danger of the wheat being carried away by the indentations of the implement.

Heavy metal and stone rollers of the common kind are also in use for wheat in the spring on the sands, but they are inferior to Crosskill's, being more uncertain and unequal in their pressure.

An excellent implement has lately been introduced from Yorkshire for raking barley. It consists of movable teeth placed about three inches apart, which rise or fall with the inequalities of the ground. It is drawn by a horse, and can be emptied of its contents, without any interruption to the work, by a crank which raises the whole of the teeth at the same time, and so allows the contents to fall.

Wagons and carts are both in general use throughout the county. Some, nevertheless, who have tried the one-horse cart exclusively, approve of it, as containing every requisite, and are prepared to cast aside, in consequence, their other carriages. We feel convinced that experience will disabuse the minds of many of the notion that one-horse carts are of themselves insufficient for every purpose upon the farm; and had not the Royal Agricultural Society offered a prize for the best essay on their advantages, which will therefore render unnecessary any remarks of ours, we should proceed to give our reasons, founded on experience, for thus recommending them in preference to any other kind of carriage, not only under particular circumstances, but under all ordinary circumstances in which they are required.

ALLOTMENTS TO COTTAGERS.

Much has been said of late years both for and against the expediency of allotting land to the poor. As we cannot but consider it a question calculated materially to affect the comfort of that class for whose benefit the allotments have been in most cases granted, we have made it a subject of inquiry in different parts of the county, as far as our means would admit, and the result of such inquiry has been decidedly in favor of the system. We cannot but regard it as one adapted not only to improve the condition of the poor themselves, but also, by a diminution of pauperism, to relieve the classes above them, who contribute chiefly to their support; nor does it, as has been asserted, render the laborer careless of or indifferent to his employer.

If there be, in a highly refined and luxurious country like our own, one sight more painful than another, it is to see the honest laborer asking from door to door "for leave to toil," that he may thereby get bread, but asking in vain. And why does he ask in vain? Is it because he asks of men not capable of feeling for their fellows? We answer, No; but too often because he who would willingly be the employer is in as hard straits as he who craves to be the employed. This is no imaginary case, but an undeniable fact, the constant recurrence of which, under our own eyes, has induced us to allude to it. Can we wonder at men, born with the feelings of Englishmen, thus disappointed, turning droopingly and despondingly away, inwardly feeling that "no man careth for them," and that our very cattle are regarded more than they? Surely this is not a question to be viewed merely through the eye of the political economist, but one which addresses itself to our best feelings as men, and to effect a remedy for which demands our best energies.

Let us therefore seek to show the poor and honest man that he is cared for, and that his interests and happiness are identical with our own; and seek,

before it be too late, to raise his broken spirit and dejected mien—to restore to him that feeling of independence which results from his respecting himself, and is the cause of his being respected by others. As a means to so desirable an end, let him have something in which to interest himself, and in the success of which he is directly concerned; and nothing offers so rational an object of his care as his own small holding of land.

We do not propose to enter into the minutiæ of the question, as to what is the most desirable quantity for each individual to hold, or what the proper amount of rental, with many other details which experience alone can determine; but shall content ourselves with referring to the humane and truly noble example which has been offered to the imitation of the landowners of Nottinghamshire by his Grace the Duke of Newcastle. We know from his Grace's agent, Mr. Wilmot, that after long experience of the system as tried by him, the result has proved most satisfactory; that a tenant holding an allotment under his Grace is scarcely ever in arrear with his rent; that, on the contrary, it is paid most punctually, and with an expression of gratitude as for a favor received—a benefit conferred; and when it is stated that the Duke of Newcastle has let off upon his estates about 2,000 gardens, it will be admitted that an opinion from Mr. Wilmot has more than ordinary weight.

The rate of wages in this county is higher than the average throughout the country. Even with the present depressed prices, we believe that 2*s.* per day is more generally given than any thing lower; and when the price of produce will admit, it is raised to 2*s.* 3*d.* a day. When the work is task-work, the laborer will frequently make 2*s.* 6*d.* or 3*s.* a day during the summer months. Where men have constant employment with such wages, they may be considered as well enough off; but it is the absence in some parts of the county, and particularly so in the clay districts during the winter months, of constant employment which occasions the evil complained of, in the hope of mitigating which the foregoing remarks have been introduced.

WATER-MEADOWS.

Amongst the most striking improvements which have taken place during the past half-century, the water-meadows of the Duke of Portland claim an especial notice. Mr. Denison, however, having given a most lucid and complete statement of them in the Society's Journal, part iv., vol. i., for 1840, renders unnecessary our saying more of them here than to mention shortly the leading facts as given by him.

These meadows comprise an area of upwards of 300 acres of land, extending over a distance of about seven miles in length. They are watered by the river Maun, as it flows eastward from the town of Mansfield. The value of the land has been raised from the annual sum of 80*l.* to that of 3,660*l.*, at a cost (from their commencement in 1816 to their completion in 1837) of 40,000*l.* The profit upon each acre, after defraying all expenses, is computed at nearly 12*l.* a year, without taking into consideration the great benefit they are to the arable land adjoining them, which, in the words of Mr. Denison, they "enrich to an extent of five times that of their own."

Stretching through a dry sandy district for so long a distance, and thus fertilizing increasingly land so dependent on foreign aid, must show at a glance their almost incalculable value. As a triumph of art, they must be considered one of the most brilliant and complete of any that is known, reflecting credit equally on the talents of the noble owner as projector, and on the

intelligence of Mr. Tebbet as executor of the works; nor are they unworthy of comparison even with those of a Bridgewater and a Brindley.

THE CARS.

Allusion has already been made to a district of land situated in the extreme northern part of the county, comprising an area of about 6,000 acres of reclaimed bog-land, a small portion of what was formerly designated the "Level of Hatfield Chase," once a vast morass of upwards of 65,000 acres, which extended, in a northerly direction, as far as Hatfield and Thorne in Yorkshire. The first attempt to drain this extensive waste was made by Dutch settlers, of whom the principal was Sir Cornelius Vermuyden, about the middle of the seventeenth century. These enterprising men effected, in some measure, the object they attempted, for which they received ample compensation by becoming proprietors of a portion, and that not an inconsiderable one, of the land they had reclaimed. The difficulties, however, of effecting a perfect drainage were of no ordinary character, from the largeness of the tract of land, all lying on a dead level; the soil being moreover highly porous—a dark peat of spongy quality; and surrounded on two sides by the rivers Trent and Ouse, which were at that time liable constantly to overflow their banks, and so inundate this vast swamp. The very banks that were raised for its security were of the same trembling bog, and consequently little likely to resist the fearful floods which at that time not unfrequently descended these large rivers.

It is to the 6,000 acres which are lying in Nottinghamshire, separated from the far larger part in Lincolnshire and Yorkshire, and which are divided by the river Idle, as it forms for some miles the northern boundary of this county, that we propose to confine our remarks. This part belongs to the several parishes of Misterton, Walkeringham, Gringley-on-the-Hill, Everton, and Scaftworth, which villages form a semicircle of several miles on its southern side, the high ground on which some of them are built resembling headlands on a sea-coast. These vast plains, when seen from the higher grounds, as they stretch for upwards of twenty miles in a northerly direction, without any object to break the monotony of the scene, are very striking; and from the great likeness they bear to the Pontine Marshes, over which the sea once unquestionably flowed, leave an impression that such was their case in ages long gone by. The natural productions of this interesting deposit were high reeds, and flags with edges indented like those of a sickle, amidst gigantic tussac grass, which formed the haunts of various kinds of wild fowl, and where was heard the mournful booming of the bittern, now extinct.

It is less than half a century since this morass was first attempted to be brought into cultivation. At that time it was so absolutely a bog that no horse could in many parts be used for ploughing it, and this operation was performed by manual labor. As the drainage was improved, the land became firmer; and from the abundant crops of rape and oats which it at first produced, gave promise of a fruitfulness quite extraordinary, which was for a time fully realized. This remarkable fertility was moreover increased by a system of paring and burning—an operation of easy accomplishment on a porous soil, but which in the end proved decidedly injurious to the land, by reducing its surface below the drainage then provided for it, although probably the natural compression arising from its being laid dry occasionally was more the cause of that inconvenience than the paring and burning. From whatever cause this might arise, the consequence was the same; and serious apprehensions were for a time entertained lest a considerable part, if not the

whole, of this tract of valuable land would be forced out of cultivation through the want of drainage; but at length steam-power was suggested as a remedy, and it has since proved quite successful.

In 1828 a steam-engine was erected of forty-horse power, at a cost of upwards of 6,000*l.*, for lifting the water by a wheel. The engine is placed upon the main drain, about three quarters of a mile from the river Trent, into which the drainage of these cars empties itself; but unfortunately, when high tides flowed up that river, there was frequent interruption to the drainage, from the water in the river being higher than that in the drain; and it would have flowed in upon the cars had not flood-gates prevented it. By placing the engine at some distance from the Trent, a reservoir was then formed in the main drain, within that space flanked by high banks; and so by lifting the water into this reservoir to a higher level than the water of the Trent, it is enabled to fall into that river at all times.

The wheel employed for lifting the water revolves between two stone walls, in a space of about 27 inches wide, through which the whole of the water is driven. The wheel itself is formed of cast-metal sides, with wooden paddles between, placed ingeniously at a certain angle which enables the wheel to lift the water above its own centre: thus a wheel of 33 feet diameter creates an artificial drainage equal to more than its radius of 16½ feet. Flood-gates are again placed immediately before the wheel, to prevent the water coming back on the wheel ceasing to revolve.

About ten years afterwards it was found necessary to erect an additional engine of equal or superior power to the one already in use, before the drainage could be rendered perfect. This was accordingly done on the opposite bank of the drain by the proprietors, at a cost of 5,000*l.* Thus the total cost of the two has been little short of 12,000*l.*, besides an annual expenditure of from 3*s.* to 4*s.* an acre for the double purpose of working the engines and cleansing the drains. Absolute command of the water is now effected; and a provision has been made of incalculable value to the occupier of these cars, by introducing, during the summer months, water from the adjoining river Idle, as a supply for the stock. It is kept at any height that is thought advisable by means of stanchions, the regulation of which occupies the time and attention of the engineer during those months when the engines are less frequently required.

In conclusion, the fields in the clays which Mr. Lowe spoke of as then open have in nearly every instance been inclosed, besides which a considerable breadth of forest-land has on the western side been brought into cultivation. Extensive tracts of land still remain waste, as it is doubted whether they are worth the expense of cultivation, being in general a light sand of the worst description; but that they might be usefully and profitably planted there can exist no question, and as they are chiefly in the possession of the large landed proprietors, we may hope that the success which has already attended their efforts in this direction will encourage them in time to complete what they have begun.

Without any wish, on the one hand, to arrogate to the farmers of Notts any thing beyond what is their due, it is, on the other hand, our duty, in giving a faithful report, to award to them all just praise. When the increased productiveness—both in the quantity of grain grown, as well as of live stock kept—has been doubled, trebled, and in some instances quadrupled, we may fearlessly claim for the occupiers of such districts a position not to be surpassed for spirit and enterprise by any in the United Kingdom; for it must

not be lost sight of that they have great difficulties to contend with, arising from physical causes, at least on the western side of the county, in a soil naturally poor, and which is greatly dependent on a sufficient supply of moisture, of which it does not, according to meteorological observations, receive even an average share.

These difficulties have nevertheless been manfully met, and, as far as any exertions could avail, have been as successfully overcome. Whatever the spirited investment of their capital could achieve has been realized; and it is to high farming, in a great measure, that the county owes its present distinguished place amongst its neighbors.

As regards the application of manures these farmers have, as a body of men, by patient observation, practically discovered that which Dr. Liebig has theoretically affirmed to be necessary to insure success when he asks whether "it be possible, after so many decisive investigations into the origin of the elements of animals and vegetables, the use of the alkalies of lime and the phosphates, any doubt can exist as to the principles upon which a rational agriculture depends? Can the art of agriculture be based upon any thing but the restitution of a disturbed equilibrium? Can it be imagined that any country, however rich and fertile, will maintain its fertility without the restoration, in some form of manure, of those elements which have been removed from the soil, and which cannot be replaced by the atmosphere? Must not the same fate await every such country which has actually befallen the once prolific soil of Virginia, now in many parts no longer able to grow its former staple productions—wheat and tobacco?" Let not the farmers of Nottinghamshire, however, suppose that all has been done that can be done, for they may reasonably hope that science will propose further improvements not only in the accommodation of the *kinds* of manures to particular crops, but also in the *quantity* and in the *state* in which they should be applied; in other words, in supplying most economically and effectually those constituents to the soil which are essential to plants.

But let it be remembered, particularly by the farmers of the clay district, that the fullest advantages of this branch of agriculture cannot result until the injurious superfluities have been abstracted by a thorough drainage.

Bolham Hall, near Retford.

COAL IN NORTH CAROLINA.

"We learn from a correspondent that an extensive coal-field has been discovered in North Carolina, on the Cape Fear and Deep rivers, and is now being opened by a company of Northern capitalists, who have recently purchased it."—*Exchange paper.*

From every quarter of the country we hear of new discoveries of coal, iron ore, copper ore, and every other description of mineral that *would be wealth*, if the planters and farmers of the country would but determine to bring to their sides the laborers and the artisans required for their extraction and their conversion into the forms fitting them for their consumption. The South abounds in coal and ore, and their extraction and conversion would make a market for their food and cotton; but they have not yet learned that the first tax upon the farmer and planter is the cost of transportation, and that *it must be paid by them*, and therefore it is that they neglect their own coal and their own ore, and *export to England their bonds, bearing interest*, to be given in exchange for iron that could be made at home, by aid of the labor that is wasted among themselves for want of a diversification of employments.

THE AMERICAN COTTON GIN.

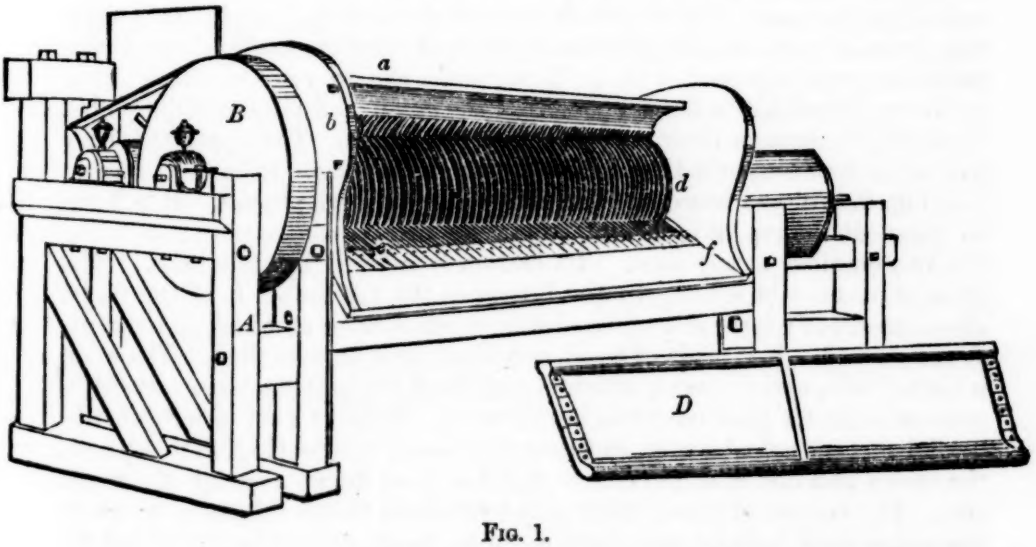

Fig. 1.

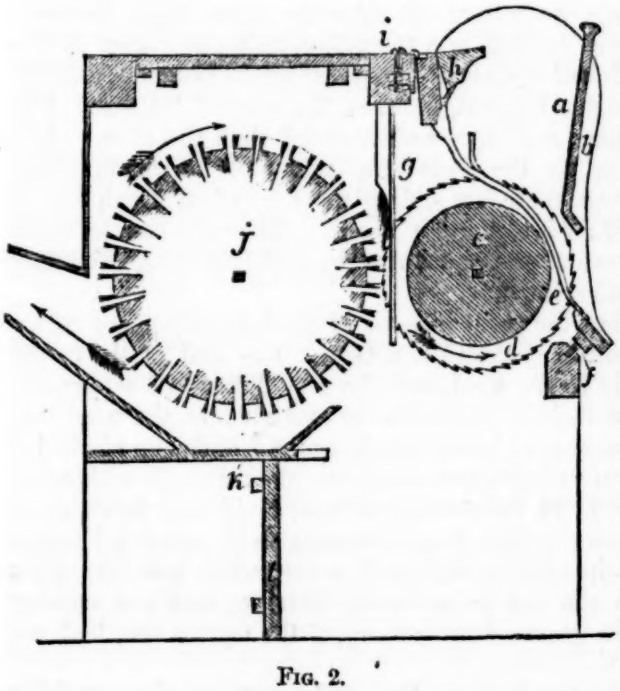

Fig. 2.

While it is to be presumed that all our readers are perfectly acquainted with most of the various kinds of cotton fabrics now in use, it is very probable that many have never seen the wonderful but simple machine, which, to use the expression of the inventor, enables "one individual to perform the work of a *thousand*," in the preparation of the material for manufacturing purposes. The Cotton Gin, an excellent representation of which is given in the accompanying engravings, has most astonishingly revolutionized the manufacture of that staple in this country and throughout the world. It embraces two principles for the removal of the seed from the wool. The saws playing between metal ribs, drawing in the cotton between them, and thus leaving the seeds behind, like drawing wool over comb teeth, is one principle; and the other is, the removal of the cotton cleaned from the seeds, by a brush roller, like a stripper fan cylinder, which, at the same time, throws the cotton out into the cotton room, by a spout leading from the gin. This will convey an idea of its principle and action; no machine can be more simple, and perform such results. Description: Fig. 1 is a perspective view, and Fig. 2 is a vertical side section.

The letters refer to like parts on both figures: A represents the frame of the machine, which may be made of wood or iron; B is a band pulley, to drive it by either steam, water, or horse-power; *a* is the box to feed the uncleaned cotton into the saws; it is technically termed the Grate-fall-head. It is made with heads of cast iron, and the lower and back sides are made of metal ribs, termed a grate, represented at *e*. These metal ribs are screwed firmly down to the wood-work in the front at *f*, termed the *breast*, and the saws represented by *d*, project through the ribs from one to two inches. The upper and back part of the feed box, called the *hollow*, is hung upon hinges, to be easily raised; *l*, in Fig. 2, is a seed board in front, and forms part of the breast. It is hung on pivots at the top, at each end, so that its bottom can be swung out, and the box emptied at any time. Its bottom is fastened by slide bolts. The grate of metal ribs is hung by the hinges to the top timber *h*, of the frame above the saws; C is the saw roller, in other words, a roller on which all the saws, *d*, are secured. It is made of wood, and fixed upon an iron shaft. The wood is turned true, and the saws, which are made of the best steel, are secured in grooves made for their reception in the wood. There is a set of wooden ribs behind the saw cylinder at *g*, and there is a row of bristles (Fig. 1) to separate the motes and dirt from the cotton that has been drawn through the metal ribs. The bottom of the said box may be inclined to one side, so as to direct the cotton seeds into the receptacle D. *J* is a brush roller, running behind the ribs, the whole length of the saw roller. It takes the cotton from the saws, and sends it out by the spout behind, into the cotton room, as shown by the straight arrow. This brush roller is about twenty inches in diameter, and the wood has slits running lengthwise in it, between the rows of bristles. The brush roller must always have a greater surface-speed than the saws. The air receives a rapid motion by the centrifugal action of the brush roller. Below and behind the brush, there is a sliding mote board *k*, which can be slid backward and forward; *l* is a bottom board. The saws can be set at the proper angle to the curve of the metal ribs, by a sliding butt, extending down, and operated by a set screw *s*.

There can be no doubt but the great increase of the consumption of cotton can be traced to the invention of the Cotton Gin. The seed of the cotton plant adheres so tenaciously to the wool, as to be very difficult of separation, and, without being separated, it is impossible to manufacture the wool into cloth. Before the invention of the Cotton Gin, it took a female one whole day to clean one pound of cotton, and the best machine—the roller gin with fluted rolls—which was in use in 1788, for cleaning cotton, could only finish about thirty pounds in twelve hours. The great consumption of cotton for manufacturing is attributable to its cheapness; but it never would have become a cheap fibrous material by the old processes of cleaning, and our country never would have become a great cotton country, if the Cotton Gin had not been invented.

It was early discovered by Tench Coxe, Esq., and a number of enterprising gentlemen of the South, that any amount of cotton could be raised in the Carolinas and Georgia; but, owing to the difficulty of cleaning it, a great perpendicular stood in the path of its extensive cultivation. In 1792, while the continent of Europe resounded only with the tread of armed hosts in battle array, England, separated from the strife, became the workshop of the world, and the demand for her manufactures was greater than she could supply; so likewise was the demand for cotton. It was at this juncture that a mechanical genius arose to meet, it may be said, the wants of the world. Eli Whitney, a native of Worcester, Mass., a highly educated and ingenious man, while a

guest with the widow of GENERAL GREENE, in Savannah, Geo., was appealed to by that lady to devote his attention to the construction of a machine to gin cotton, as it was in vain to think of raising it for the market while the means to clean it were so inefficient. Whitney at once commenced experimenting; and, after much study and toil, completed his Cotton Gin in the early part of 1793. At its first exhibition, all who saw it were astonished with its power, for it separated more cotton from the seed in one hour than one man could do, by the old method, in many months.

The cotton fields of America embrace an area of 500,000 square miles, and there are $500,000,000 invested in their cultivation. The exports of manufactured cotton goods for 1850, by Great Britain, amounted to $350,000,000. The export of cotton from the United States exceeds in importance that of all other raw materials; and the mainspring of all this is traceable to the Cotton Gin, which, at the present day—like the steam-engine, as it came from the hands of Watt—is the same in every essential feature as the day in which it came forth from the plastic hands of the ingenious WHITNEY.

ON THE REARING OF CATTLE.

BY C. W. WOOD, OF WOODHOUSE, ENGLAND.

How few farmers are there who understand the rationale, the why and wherefore, of most of their agricultural operations; and what chance is there for improvement when they are content to follow blindly in the beaten track of their predecessors, without inquiring if there be not a better path? What chagrin and disappointment might have been avoided, and how much time and money saved, by many importers and purchasers of improved cattle, had they read and acted upon the following advice, which we consider one of the best, because one of the most practical and comprehensive, contributions ever made to the agricultural press.

The heading of this article formed the subject of a paper read by Mr. Wood at the June quarterly meeting of the Loughborough Agricultural Association. Mr. Wood confined himself strictly to the subject, not of breeding or of fattening, but of rearing stock; treating it under the following heads:—1. The Constitution and Economy of Agricultural Cattle. 2. The State and Condition in which they exist. 3. Their Food and General Management.

In the consideration of the substances which compose the animal frame and their qualities, a key may be found to many secrets in the general management of young cattle, particularly as regards their habits and their food. Science points out to us a frame-work of bones, (the principal ingredients of which are phosphorus and lime,) to give form, uprightness, stability, and strength to the machine; next, an attachment of muscle, (composed chiefly of fibrin and gluten,) to give motion and activity to the body; and lastly, a respiratory and circulating apparatus, to supply heat, nourishment, and life to the whole, in order to resist the chemical powers from without. Seeing, therefore, that we have a mixed machine to deal with, it is self-evident that mixed or combined means are needed to carry out the first intentions of nature, and without which life could not exist. We must have, first, starch or sugar, to supply carbon for respiration; second, fat or oil, to keep up the fat which exists, more or less, in the bodies of all animals; third, gluten or fibrin, to supply muscle and cartilage; fourth, earthy phosphates, for the supply of bones; and fifth, saline substances, sulphates and chlorides, to replace what is daily rejected in the excretions.

The second proposition requires to be clearly defined, viz.: the state or con-

dition of animals. We find this to be threefold, each of which requires our anxious attention. We have, first, a fœtal state, or one in connection with the mother, which exists before birth; secondly, a state of growth or development, which comprehends the period from birth to maturity; and thirdly, the state of the full-grown animal.

We have no control over the condition of the fœtal animal, except through the medium of the mother, of the general management of which I shall speak presently. Of the second condition, nature must be closely observed and carefully imitated, in order that the third or ultimate condition may be healthy, full-grown, and useful—the great object of the farmer, to repay him for all his expense, anxiety, and toil.

It is a very false economy to stint the allowance of food to a young animal. New milk, or the flour of all leguminous plants, such as beans, peas, &c., which contain casein, with an infusion of oil-cake* to promote fat, seems nearly to approximate to the composition of ordinary milk, skimmed milk being destitute of the principal ingredient required by nature for the support of respiration. This, in addition to warmth and cleanliness, will always keep the vital powers predominant over the chemical—the cardinal point in the rearing of cattle.

I now come to my third proposition, viz.: "their food and general management;" and a more important and profitable subject cannot engage your attention. It must be considered in detail. I will begin, therefore, as I proposed, with the fœtal condition of the animal, and take a calf as a general example. It, like all other animals, is supported and nourished by the blood circulating from the mother through its own body, from the moment of its earliest formation up to the time of its birth; which blood contains, ready formed, all the various substances which are necessary for its formation. In addition, therefore, to all that is necessary for its own sustenance and existence, the cow forms a new and complete animal; it also secretes food for this new animal, which is to sustain and increase it for a considerable time after its birth; for the milk, like the blood, is the most perfect food, and contains every substance of which the body is built. When sucking is at an end, should we not imitate nature, a sure and unerring guide to philosophic truth? Any animal—whether cow, horse, sheep, or pig—having its own existence to support, (I will add, in agricultural language, "in good condition,") a new animal to form, and one also to feed, is, to say the least of it, in a most important and interesting condition. Is such an animal to be sent to feed upon a scanty pasture, to be turned into a miserable and wet farm-yard, or kept upon straw and an occasional turnip, until she is little better than a bag of bones; and then, forsooth, to expect a fine healthy offspring, with an abundance of milk for its sustenance? And if such brilliant expectations are not realized, the fault is to be laid upon the poor beast—"She is not a good milker;" or to the land—"It will not do for rearing, or for dairy purposes;" in short, upon any thing rather than upon their own stupid, ignorant, and thoughtless minds. Breeding stock, gentlemen, cannot be kept too well; they are, in truth, feeding stock to others, and ought to have the best a farm affords; the best pastures in the summer, with cabbage and common turnips in the autumn; Swedes, sweet straw, oil-cake, [corn meal,] and hay in the winter; and in the spring after calving, some mangel-wurtzel, steamed potatoes, and hay, until the grass time again.

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* Indian corn, the glory of American agriculture, is more than an equivalent for this main-stay of the British feeder.—Ed.

To nourish the young animal in the womb of its mother, an additional quantity of food must be given, and this quantity must be increased as the state of pregnancy advances; and the kind of additional food must readily supply the materials of the growing bones and muscles of the fœtus, and contain a larger quantity of starch or sugar, also, than the mother in her ordinary state would require. This is required by the circumstance that the mother must now breathe for herself and her young; the quantity of blood is increased, more oxygen is taken in the lungs, and consequently more carbonic acid is given off. A certain proportion of bone and muscle must also be supplied to the young animal by the food given to the mother, or the bones and muscles of the mother herself will be laid under contribution to supply it. This must be effected by the quantity of phosphates, gluten, fibrin, or casein, which are given in the food with which the mother is fed.

An animal thus kept will be in the most profitable condition to rear its young; and bear in mind, that as the calf grows rapidly, the food it requires increases daily with its bulk, and the demands upon the mother every day become greater. At this period, therefore, the cow must obtain larger supplies of food to sustain herself and to produce a sufficient quantity of milk for her calf. If, then, adequate supplies are not given, a portion is daily taken from her own substance, which causes her to be lean and feeble, and her young stinted and puny in its growth.

What has been said regarding the food given to the cow, will be more or less effective in promoting the growth of the young animal fed solely on milk: when richer in curd, it will promote more muscle; when richer in phosphates, more bone; and in butter, more fat. Milk is a perfect food for a growing animal; nothing is wanted in it. The mother selects all the ingredients of this perfect food from the substances which are mingled in her stomach from the food she eats; she changes them chemically in such a degree as to present them to the young animal in a state in which it can most easily, and with least labor, employ them for sustaining its body, and all this at a given and appointed moment of time. In due time, the young animal begins to feed for itself, and then the mother improves in condition. Warmth, exercise, and good food are all that then is required; always bearing in mind that, as nature prepares the food for young animals in a state in which they can most easily digest it, so we should prepare by boiling or steaming all dry food and roots for the same purpose. In the growing animal, the food has a double function to perform—it must sustain and it must increase the body. Hence, whatever tends to decrease the sustaining quantity, (and cold, exercise, and uneasiness do so,) will tend in an equal degree to lessen the value of a given weight of food in adding to the weight of an animal's body. To the pregnant and the milking cow, the same remarks apply. The custom of allowing young cattle to remain during the whole winter in straw-yards, exposed to all the variations of weather, cannot be too loudly condemned. Oil-cake, it is true, which is sometimes given in large quantities, makes some small amends by the supply of carbon to the system; but if a warm, dry, and clean shed was substituted, with turnips instead of cake, the condition and quality of the animal would be very much improved, and a considerable saving of expense be effected, to say nothing of the improvement of the manure.

All vegetables contain, ready formed, (which they extract from the food on which they live,) the substances of which the parts of animals are composed. The animal consequently draws, ready formed, the materials of its own body from the vegetable food it eats. The starch, sugar, and gum in vegetables, are to supply carbon for respiration. Carnivorous animals obtain it from the

fat of the food; starving animals from the fat of their own bodies; and young animals, which live upon milk, by the sugar it contains. In the young animal we find an excess of life; it has to increase as well as sustain itself. In the full-grown animal we find the daily waste of substance, which is carried out of the body in the excretions, made up by the gluten, phosphates, and the saline substances in the food, and a balance kept up between the powers of life and the bodily structure; it simply has to sustain itself. In the old animal, when life is diminished, we observe a proportionate decrease of bodily substance.

It is interesting and wonderful when we thus trace the existence of the bodily structure of all animals ready formed in the vegetable, which property in vegetables is formed during their growth—is derived from sources purely gaseous and inorganic, by chemical, mechanical, and physical operations. It is the duty of the practical farmer to adopt these methods for improving the soil; but this forms no part of my subject.

Sheep.—The additional value to your flock by this mode of management, and especially in giving them some dry food, such as hay or corn, before lambing, is very great. It gives firmness of fibre, and adds greater vigor to life, a greater activity to the vital powers, by which alone it is capable of resisting disease, and of arriving at an early maturity. The improvement of the fleece, by such a course, will be fifty per cent. The old breed were kept from two years to two years and a half old before sold, and rarely exceeded 10 lbs. or 15 lbs. a quarter. It is true, breed has much to do with this question; but in sheep of the same breed, kept in different ways, a difference of twenty-five per cent. may be frequently observed. To insure a healthy offspring, a good fleece of wool, and of sound staple, sheep require to be kept well, in the spring months particularly.

Pigs.—Pigs ought never to lose the fat or condition they receive from the mother, which is easily kept up by milk, peas or beans, and all of which contain flesh. A small quantity of oil-cake, once or twice a day, in addition to turnips, mangel-wurtzel, or any vegetable food; fed in this way, many months are saved in time, and you have the advantage of summer feeding, which, on account of the warmth, is by far the best period for this purpose.

Horses.—I need only say that where great muscular development is required, as in the case of race horses which run for the two-year-old stakes, they are corned very high as soon as they can eat it; and it is astonishing to see the strength and activity resulting from such a plan. Early maturity is very profitable here. Give your yearlings plenty of oats and beans, with steamed potatoes during the winter, and you gain a complete year in time, besides the increased value you put upon the animal; and in summer feed them upon rye or clover, the best possible food for horses. The sooner they are broken in the better; their tempers become quieter, and they thrive more. I wish to mention here the great value of salt to all young animals; it destroys bots and worms, it promotes digestion, and assists the secretion of healthy bile, the medium through which respiration is supported; this, however, should be given in moderate quantities.

Having now spoken upon the general management of the various kinds of cattle usually reared by the farmer, I shall conclude with a few remarks upon their food; and I deem you will not consider this out of place. The amount of food, either for man or beast, which a given acre will produce, depends considerably upon the kind of crops which is raised. Thus, a crop of 30 bushels of wheat will yield only about 1,400 lbs. of fine flour, while a crop of

six tons of potatoes will give about 4,400 lbs. of an agreeable, dry, and mealy food.

It is said, on the authority of the Board of Agriculture, that a crop of clover, tares, rape, or potatoes, cabbage, or turnips, will furnish at least three times as much food for cattle as an equal breadth of pasture-grass of medium quality. This, however, being but a hint, I will at once give you a table of the nutritive qualities of the various sorts of food now in common use. It is selected with some care from the various tables published, and has direct reference to the subject before us, on account of the proportions of gluten, starch, and oil which each article contains.

In the root crops I place—first, carrots; second, mangel-wurtzel; third, swedes; fourth, potatoes; fifth, cabbage; sixth, common turnips.

In the green crops—first, dills; second, rye; third, clover; and fourth, grass.

In the corn crops—first, beans; second, peas; third, lintels; fourth, wheat; fifth, barley and Indian corn; sixth, oats; seventh, rye; eighth, buckwheat.

In the straw crops—first, pea straw, which is nearly equal to hay; second, oat and barley straw; fourth, wheat straw; fifth, rye straw; and sixth, bean straw.

Three pounds of oil-cake are equal to about ten pounds of hay.

THE MORALS OF BRITISH FREE TRADE.

"A good deal of strong feeling has been excited by the arrival of instructions from the British Government with regard to the course to be pursued by the Consul, in his dealings with British vessels which are accused of smuggling, in defiance of the treaty with the Chinese. From the statements of the *Mail*, it appears that smuggling is carried on by British traders to an extent which 'not only reflects disgrace upon British merchants generally, but inflicts injury on the honorable trader;' and that, instead of adopting means to prevent the practices, the Government has removed the slight obstructions that have hitherto existed. This has been done, the *Mail** remarks, with a full knowledge 'that the Chinese authorities would not, if they could and durst, enforce the law against British subjects, who are encouraged to proceed to greater infringements on the rights of the imperial government.'"

The journal from which we derive these statements is owned and edited by a subject of Her Britannic Majesty, and we lay them before our readers with a view to call their attention to the fact that the British system, called free trade, is every where maintained by aid of the total demoralization of those concerned in it. But recently, the towns and cities of China were battered down, its women outraged and its men destroyed, for the purpose of securing the power to *smuggle* the opium of which the East India Company enjoys *a monopoly* against its own unhappy subjects; and this is what is known in the Manchester system of political economy by the name of free trade!

Having thus asserted the right to perfect freedom in the work of poisoning the people of India, the next process was that of securing *a smuggling station* like Hong-kong, from which, as is seen in the above extract, merchandise of all descriptions could be carried into China free of duty, and to maintain at that port a force sufficient to compel the Chinese Government to submit to the perpetual infraction of its laws; and all this is done in the name of British free trade!

For more than a century has Gibraltar been maintained as *a smuggling station*, having for its object the prevention of any thing like association be-

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* *Chinese Mail*, published at Hong-kong.

tween Spanish producers and consumers, and to that, more than to any other cause, are to be attributed the demoralization and weakness of Spain.

It is usual among Englishmen to talk of British magnanimity, and perhaps the fairest specimen of it that could be produced would be the one described in the extract above given. The Chinese Government is weak, and therefore the British Government has now "removed the slight obstructions" to smuggling that had previously existed, and it has done this under the belief that the former "durst not enforce the law against British subjects."

The largest contributors in the world towards the maintenance of British fleets and armies are the farmers and planters of America, and without their aid the British Government could no longer trample upon the rights of the people of Ireland and India, of Spain, Portugal and China. How long will they be content to impoverish themselves for the maintenance of a system so destructive of the rights and of the happiness of the rest of mankind?

From the Journal of Agriculture.

MEMOIR OF JOHN S. SKINNER.

A TRIBUTE of respect to the oldest laborer in the field of agricultural literature, from the youngest! It is meet and proper that we who are just entering on the path trodden for more than thirty years by the way-worn and weary veteran who now rests from his labors,—that we, who walk in his footsteps and profit by his pioneer labors, should carve one line upon his tombstone in grateful acknowledgment of our obligation.

What though the noble heart, that ever throbbed with quicker pulsation at the voice of kindness, is stilled? What if the eye, that would have beamed through the gathering tear-drops at a tone of sympathy, has been closed by the icy hand of death? What though the tongue, else eloquent of thanks, is chained and still? What matters this, or all these, to our debt—our debt to the dead?

No marble monument, erected by those whom he faithfully served for thirty years, may mark the spot where his remains repose; no gathering of thousands and public eulogy may express to the world the estimation in which he was held; but will those, in whose cause he spent the strong years of his life—the farmers of America—will they reap the fruit of his labors, and decline to pay him his hire? His was the first voice that was heard claiming for agriculture its rights as a science. His light gleamed alone, but brightly and steadily, amid the dark mists of ignorance and prejudice; and even now—now when the land is illuminated by a thousand—that same torch, in other hands, is burning and blazing with a pure and brilliant flame. Over thirty years ago, our buried brother established the old *American Farmer*, at Baltimore, the first periodical in America which devoted its columns to agricultural intelligence and information, the ancestor of all those now living. Is the voice of the agricultural press gone, that no one has heard a whisper from them for any testimonial of respect to the oldest agricultural editor in America! True, he has gone beyond our reach and beyond our sympathy; his Father alone can reward him for the "deeds done in the body;" but the partner who shared his sorrows and his toils remains with us, with a scanty pittance saved from the wreck for her support. Can we not pay to her what we owe to him?

Let the farmers' voice be heard. What say they? Will any second our

motion, that, throughout the land, we should in some palpable manner, and in concert with one another, express our respect for the departed by succoring the surviving? Will any one propose a plan?

We subjoin a sketch of Mr. Skinner's life, prepared, at our request, by one who knew him well and loved him. It is a brief recital of services rendered, without any attempt at eulogy, and without dwelling, as friends might, upon the lovely traits of character which caused Mr. Skinner to be loved and respected throughout the Union.—EDITOR.

JOHN STUART SKINNER was born on the 22d day of February, 1788. He was a lineal descendant of Robert Skinner, who emigrated from England early in the seventeenth century, and became a large landed proprietor on that portion of the peninsula between the waters of the Chesapeake Bay and the Pawtuxent river, now Calvert county, in the State of Maryland, where he died in the year 1786. (Vide note to General Wilkinson's memoirs.)

The great-grandson of Robert Skinner, (Frederick Skinner,) the father of J. S. Skinner, was one of the most respected and popular men in the county, which even then contained an intelligent and refined society. He departed this life 2d December, 1809. From father to son, down to the subject of the present notice, they have all been tobacco planters, and the original homestead is still in possession of a member of the family, Mr. Levin Skinner, a nephew of the late John S. Skinner.

John S. Skinner received his early education at the country schools in the neighborhood of his father's house; thence he went to Charlotte Hall, St. Mary's county, Maryland, long noted as the best school in the Middle States. At the age of eighteen, Mr. S. went to Annapolis, the seat of Government of the State, and studied law with the late Chancellor Johnson, the father of the Hon. Reverdy Johnson. Before he was of age, he was appointed notary public by Governor Wright, who overcame the objections made by some members of the Council to Mr. Skinner's appointment on the score of his youth. He was three or four years elected reading clerk to the Legislature. His studies finished, he was admitted to the bar, and at twenty-one commenced the practice of the law. On the 10th of March, 1812, Mr. Skinner was married to Elizabeth G. Davies, of Baltimore, by whom he had three sons, one of whom only survives his father. His second son died in Louisiana in 1847, leaving a wife and two children. During the last war with England, Mr. S. was appointed, by Mr. Madison, Government agent to negotiate with the British forces in Chesapeake Bay. His associations with the superior officers of the fleet were not confined to mere official courtesies, but ripened into friendship; and at intervals more or less distant, up to the time of the decease of Admirals Cockburn and Barry, the most friendly letters were exchanged between them. Other friends were also made on board the British fleet.

In the fall of 1813, Mr. Skinner moved to Baltimore; and when the flotilla was launched, he was appointed purser. He was afterward appointed postmaster of Baltimore by Mr. Madison, which place he held for twenty-two years, and until removed during the administration of Mr. Van Buren. Mr. S. was a great favorite with Presidents Madison and Monroe, having refused from the former a judgeship in the West, and the post of Secretary of State in Arkansas. At the approach of the British forces upon Washington, Mr. S. rode ninety miles in the night, and first announced to the Government their march, after having warned the public authorities a week prior to their setting out.

Mr. Skinner was an ardent admirer and lover of all sorts of rural employments and internal improvements. His whole heart was wrapped up in the improvement of his country, its agricultural interests in particular. Thinking his native State behind those of the North and East in its agricultural progress, he determined to use all his energies and talents to arouse his fellow-citizens to emulate their neighbors; and established the very first agricultural paper that was ever issued in the United States, almost exclusively devoted to the farmers' interest, the old *American Farmer*. The first number appeared on the 2d of April, 1819, without one single subscriber. It proved in the sequel to be one of the most useful, and probably the most profitable journal of the kind ever published in the country. The subscription was $4 a year. He carried it on for several years, and afterwards sold it for $20,000. No pains were spared to make the *Farmer* worthy of the cause, and many essays from the best writers in the country appeared in its columns. Even now it is considered a text-book by many of our farmers. He was the first to propose and get up the agricultural shows in the Middle and

Southern States. Now they have fairs in almost every county, and it is admitted by all they are of great utility.

To the *American Farmer* succeeded the *Turf Register*, which was also sold for a good price.

On the election of General Harrison, Mr. Skinner was appointed Third Assistant Postmaster-General. In this important post he saved to the Government, as the records will show, $200,000, by curtailment of expenditure in his bureau, and yet was popular with the mail contractors. Mr. S. was removed from this post by Mr. Cave Johnson, Postmaster-General under Mr. Polk. Mr. Skinner's unremitting industry and close confinement, while in the General Post Office, dreadfully impaired his health, and brought on a giddiness of the head, which caused him very suddenly to lose his hearing. This was not only a dreadful privation to himself, but a very great loss to his friends and acquaintances, for there were few more blessed with conversational abilities than he. He then became editor of the *Farmers' Library and Agricultural Journal*, for Messrs. Greeley and McElrath; but this work was too costly, and possibly of too elevated a character, to become popular, and it was discontinued. Then, by the advice of his friend, Mr. HENRY C. CAREY, and by his assistance and that of his Eastern friends, he started THE PLOUGH, THE LOOM, AND THE ANVIL, a journal which, up to this time, has been gaining rapidly in public estimation.

Mr. Skinner was the intimate and confidential friend of the good LAFAYETTE, and corresponded with him for years before they met. This was owing to the fact of Mr. Skinner being the nephew and namesake of General Lafayette's bosom friend and companion in arms, Col. Jack Stuart. Mr. S. transacted all Lafayette's business in this country, both for father and son; and after the death of both, continued to do so for the heirs, until the melancholy accident which caused his own death. Mr. S. for many years maintained an extensive correspondence with distinguished men, both at home and abroad, and at the time of his death was a member of many of the foreign agricultural societies. He also received a vote of thanks from the Chilian Congress, for his services rendered in their struggle for independence. Mr. Skinner had talents of the highest order; and had he devoted himself to his profession, the law, he must have risen to great eminence; but he was drawn from it by his great love of agricultural pursuits. To cultivate and improve the soil, and to raise the character of the farmer, was the great object of all his labors. In private life, as a *husband*, a *father*, and a *master*, *he was devoted, affectionate, kind, and too indulgent.* He was hospitable to a fault, generous, unsuspicious, and confiding. In money matters, he was as simple as a child. He was charitable as the day, and it might with truth be said of him, "His left hand knew not what his right hand did." Good, noble-hearted man, take him all in all, it will be long before we look on his like again.

THE NEW TEST OF A NATION'S PROSPERITY.

"The system termed free trade meant cheapness and competition. They were identical, and this meeting was assembled to consider the effects produced upon their interests by the application of the principle of unrestricted competition, termed free trade. Cheapness was held up to the working classes as the one thing needful; and so that cheapness was but secured, men ran away with the idea that they had gained the one thing needful, and that thus their prosperity and welfare were secured and established for ever. But what was the fact? This cheapness meant nothing else than cheapness of labor. *What signified to the working man the money price he had to pay for the articles he required, except in reference to the money price which he himself received for that which was his only capital, his bones, his sinews, and muscles, his powers of body and of mind?* (Loud cheers.) It was all very well for Mr. Cobden to assert, as he had once asserted, that emigration was a result of the operation of the corn laws, and that if the food were brought to the people, they would not have to drive the people to the food. 'Give us but cheap bread,' said he, 'and you will find two masters running after one working man; no working man will be in want of employment, and no working man will fail to obtain high wages for that employment, which will then be seeking him in prodigal redundancy.' But was that the case? Had that end been attained up to the present moment? (Cries of 'No.') As far as his observation and his information went, (and it was most extensive,) it was not the case throughout the country; it was not so even in the manufacturing districts; it was not here in London; and the prosperity which was vaunted and echoed, and re-echoed, by the free-trade journals day after day had no existence, in his judgment, except in the columns of those journals, and in the minds of those persons who yielded themselves unresistingly to the dogmas which were put forth to cheat and gull them to their own

destruction. (Loud cheers.) He had said that cheapness meant cheapness of labor. And why? Let them consider soberly and quietly what were the elements of which the value of every material was composed. Those elements were the raw material and the labor that fashioned that raw material for the use of man. Take cotton. What was the value of one pound of cotton? Fivepence, perhaps. Every pound of cotton was spun into five yards of cotton cloth upon the average. And what was the value of a yard of cotton cloth on the average? Perhaps fivepence. But the cotton that entered into the composition of a yard of cotton cloth being worth one penny, what gave it the additional value of fourpence when manufactured into cotton? Chiefly labor. (Hear, hear.) In fact, the larger proportion of the elements which constituted the value of every product was labor. Was it not to seek after a phantom, then, to go in search of cheapness? If labor were not cheapened, they could not obtain that cheapness in any article of produce. So he said that cheap labor must inevitably follow the cheapness of the means of subsistence. (Cheers.) And if there was a smaller supply of labor in a country than was required, it mattered not what might be the price of the means of subsistence; the law of supply and demand would always settle the price of labor. That was the case with the United States of America, for instance, where, in consequence of the limited supply of labor, wages were high and food cheap. But here in England we had a redundant population, and, as a result, competition in labor, the worst and the bitterest of the enemies of the working man. *Laborer bid against laborer, and down went the wages until they reached that lowest level, what a man could subsist upon.* (Hear, hear.) That was more than a theory; it was a fact. It was a practical question, and no individuals could better judge of it than the persons who were then present. (Cheers.) Why were skilled artisans' wages not beaten down in the same way? Simply because they combined together, and would not be beaten down. They would not consent to allow themselves to be put in competition one against the other, and they were right. (Loud cheers.) Now, that competition which was held up as the greatest possible boon was the subject of the strangest conceivable confusion of ideas. It was perfectly right that they should compete for the purpose of ascertaining who could produce the best article; it was perfectly right that they should compete for the purpose of stimulating the intellect. But what was the competition of free-traders? It was a base, sordid, demoralizing competition—a competition for mere cheapness; so that *the man who would allow himself to be the most degraded in the social, physical, moral and political scale, was the very individual who would win the race in that struggle.* (Cheers.) He denounced that competition; it was an unholy and a mischievous one, and the working classes in particular ought to set their faces against it. What did free trade do for them? It told them that they should not only be set against one another at home, but that in the foreign trade they should have to compete with the serfs of Russia and of Poland, who lived on horse beans, and who did not know what was meant by the comforts of a home. (Hear, hear.) Under that system, the man who was content with the lowest description of food and other necessaries of life, was the one who could produce at the cheapest rate, and who would inevitably be the most successful. Was that beneficial competition? Was it a competition to which Englishmen ought to be exposed? (Cries of 'No.') They should look deeper than the surface in considering the question; and they should not allow themselves to be deluded by the paltry artifice of exhibiting a large loaf and a small loaf as the emblems of free trade and protection. *It was not the cheapness of an article, but the facility with which a people could obtain the means of purchasing it, that was the test of a nation's prosperity.* He would read a few passages from a work of an able American writer, Mr. H. C. Carey, for the purpose of showing the opinion which so competent a judge entertained of the free-trade system of this country: 'The British system is built upon cheap labor, by which is meant low-priced and worthless labor. Its effect is to cause it to become from day to day more low-priced and worthless, and thus to destroy production, upon which commerce must be based. The object of protection is to produce dear labor, that is, high-priced and valuable labor; and its effect is to cause it to increase in value from day to day, and to increase the equivalents to be exchanged, to the great increase of commerce.' 'Were Ireland this day free, she would establish protection, and thus arrest emigration. Food, and cloth, and iron, would become more abundant, and commerce would grow. Were Canada independent, she would establish protection, and then she would retain the immigrant coming from Ireland or England. Were India independent, she too would establish protection, and then the culture of cotton would be resumed on the rich lands of Bengal.' 'The British system is 'a war upon the labor and capital of the world;' upon her own as well as that of other nations. Its effect is to keep the return to the capitalist at a very low point, and often to deprive him altogether of return, and all because it tends to compel the laborer to underwork the Hindoo and the Russian, and to sink him to their level.'"

We take the above from the report of an admirable speech made by Mr.

G. F. Young, at a meeting at the Tower Hamlets, London, and now lay it before our readers with an urgent request that they will, each and all, consider it with special reference to themselves. Let them ask themselves if the test of their own prosperity consists in the cheapness of food, of clothing, or of iron, or in their own ability to obtain it. Clothing is now cheaper in money, but it is so much dearer in labor than it was four years since that the consumption, per head, has largely diminished. Iron is now cheap in money, but in labor it is so much dearer than it was four years since that the consumption, per head, has diminished at least one third. Are these things evidences of growing prosperity?

The object of the British system is that of having laborer to compete against laborer, farmer against farmer, planter against planter; to have two laborers seeking one master, two farmers seeking one consumer of food, two planters seeking one mill-owner. And the tendency of the tariff of 1846 is to enable the masters, the consumers, and the mill-owners to attain this object. Of what advantage is it to the Irish laborer that cloth is cheap, when he cannot sell the labor of "his bones, his sinews, and his muscles, his powers of body and of mind," even for sixpence a day? Of what advantage is it to the farmer of Illinois that iron is cheap, when he is compelled to sell his wheat at forty or forty-five cents a bushel? Of what advantage is it to the planter that either cloth or iron is cheap, when he finds himself compelled to sell his cotton at thirty dollars a bale? The tendency of the Manchester system is here most properly described. The farmers and planters of the Union are invited to seek degradation "in the social, physical, moral and political scale," and to exert their power in competition with their fellow agriculturists of the world, seeking to degrade them in the vain hope that they may thereby be enabled "to win the race in the struggle," the sole object of which is to increase the quantity of the raw produce passing from the producer to the consumer through the ships and mills of Britain, and thus enabling the middlemen of that country to control the manufactures and trade of the world.

It is high time that our planters and our farmers should open their eyes to the true object of the Manchester system of free trade, and understand that its tendency is to the universal degradation of man, and that IN LENDING THEIR AID TO ITS ACCOMPLISHMENT THEY ARE GUILTY OF A CRIME. To the aid they have already given, Britain has owed the power that has enabled her to ruin Ireland and India, and that is now enabling *the few* among the people of England more and more to monopolize the land once divided among *the many*, and to increase the number of men that are seeking one master; or in other words, to degrade them from the condition of freemen to that of slaves. How long they will continue thus to lend their assistance to the accomplishment of the degradation of man throughout the world, remains to be seen; but we trust the day cannot be distant when they will see that in making a market on the land for the products of "the bones, the sinews, the muscles, the powers of mind and body" of their own fellow-citizens, and thus enriching their land and themselves, they will be doing what in them lies for aiding in establishing the freedom of man throughout the world.

TO PROTECT SHEEP FROM DOGS.

THE general evil of dogs, which I see is claiming at present the most stringent legislation in our Northern States to protect the sheep, likewise exists with us. Our own Legislature has done much, and will, no doubt, do more at the proper time, to eradicate this evil. In the mean time, let me publish to the sheep-raising world a remedy against the destruction of sheep by dogs, which was given me a short time since by a highly

respectable and valued friend, himself an extensive wool-grower. It consists simply in placing on one sheep in every ten of the flock a bell of the usual size for sheep. The reasoning of my friend is this: the instinct of the dog prompts him to do all his acts in a sly, stealthy manner; his attacks upon sheep are most frequently made at night, while they are at rest, and the sudden and simultaneous jingling of all the bells strikes terror to the dogs; they turn tails and leave the sheep, fearing the noise of the bells will lead to their exposure. The ratio of bells might be made to vary according to the size of the flock.

The importance of sheep preservation from dogs, the writer hopes, will claim for this communication an insertion in most of the papers of the Union, that a remedy so cheap and simple may be fully tested.—*Richmond Whig.*

HOW THE TARIFF OF 1846 EXTENDS THE MARKET FOR THE GREAT STAPLE OF THE SOUTH.

THE import of cotton into Cincinnati—

Of the crop of 1846, was	12,528	bales.
" " 1847,	13,476	"
" " 1848,	9,058	"
" " 1849,	8,551	"
" " 1850,	7,168	"

In North Carolina, during the last year, the mills reduced their operatives one half, two thirds, and even, as we understand, three fourths. One mill was burnt, and none have been built; and such has been, to a great extent, the course of operation every where south and west of Pennsylvania. The road from Baltimore to Washington abounds in deserted cotton mills, and yet, diminished as is our production of cotton cloth, our power to consume it diminishes yet more rapidly, as will be seen by the following facts.

The export of domestic cottons for the last fiscal year exceeded, as was shown in our last, by about one third, that of the previous year. We have now before us the export *from Boston alone*, of the three months of July, August, and September, and they amount to - - - $854,000

While the total exports from January to the close of September have been - - - - - - - - - 1,956,817

Against, in the same period last year, - - - - - 1,147,094

And in 1850, - - - - - - - - - 1,228,446

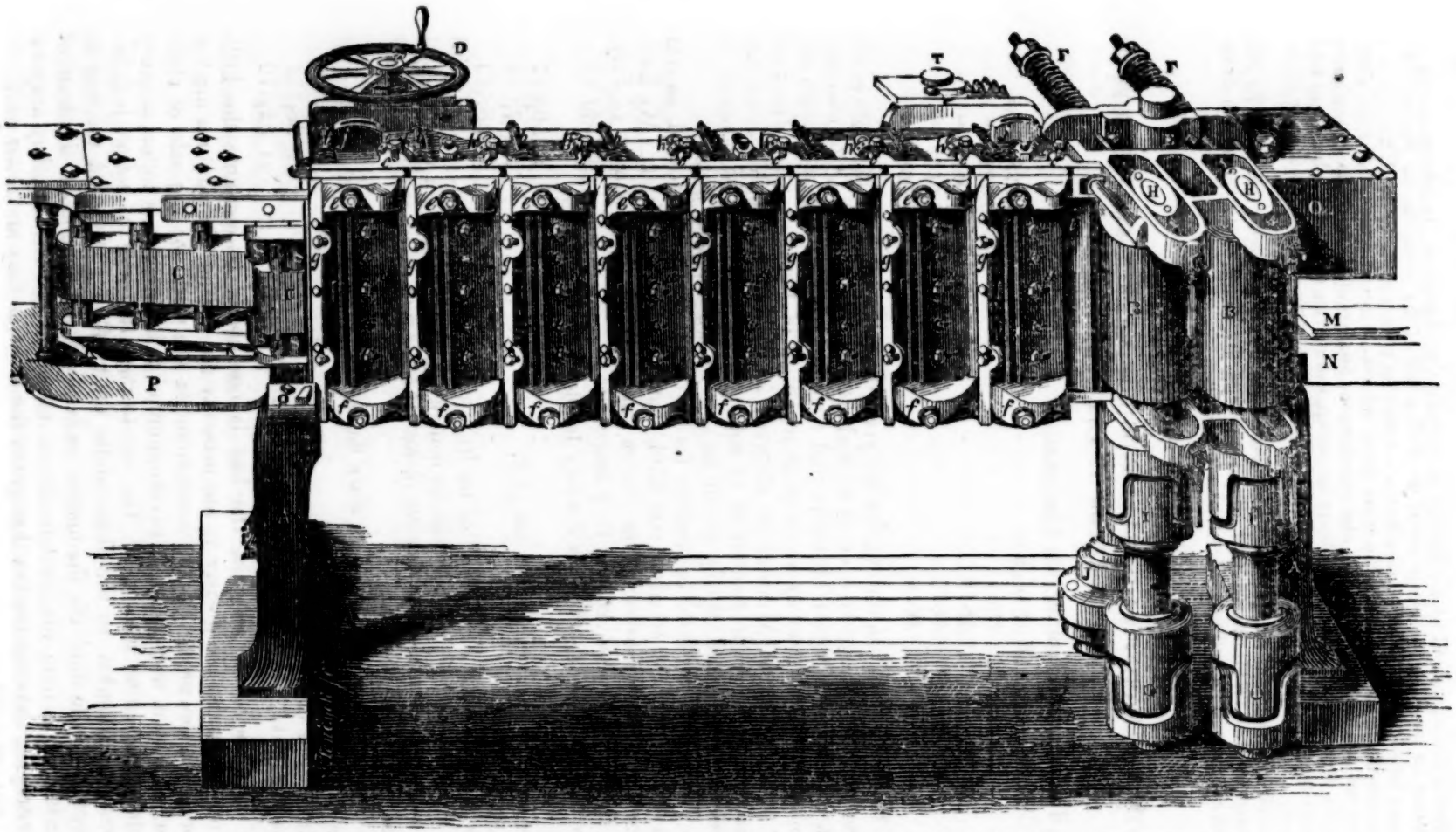
We have here an increase of no less than seventy per cent. as compared with 1850, and of fifty per cent. as compared with 1849, when we spun and wove *one hundred and sixty-four thousand bales* more than we have done in the last twelve months.

The exports from New-York show similar results, those of the present year having been, bales and cases, - - - - - - - - - 32,865

Against, in the last year, - - - - - - - - 28,484

And in 1849, - - - - - - - - - - - 21,370

The less cotton we spin, the less is our ability to consume the little cloth we make, the greater is our necessity for seeking abroad for a market for cloth, the greater is the competition in the world for the sale of cloth and of cotton, and the greater is the diminution in the price of cotton, as every intelligent planter must see. The way to raise the price of cotton is to increase the market, as was done under the tariff of 1842; and the way to depress it is to diminish the market, as is now being done under the tariff of 1846. It is time the planters should awake to the fact that they are now destroying the only market that grows the faster as they are better paid.



BEARDSLEE'S ELASTIC CUTTER, FOR PLANING BOARDS AND PLANK.—SEE NEXT PAGE.

BEARDSLEE'S ELASTIC CUTTER, FOR PLANING BOARDS AND PLANK.

A NEW Planing Machine was patented on the 20th of May last, by George W. Beardslee, of the city of Albany, N. Y., of which the opposite engraving is an illustration. It presents a view of the machine in perspective, upon the mill floor, and shows the outline of the structure, as it stands. It planes boards and plank with a series of line cutters, which are so attached and adjusted to side plates, that the heels of the stock hold together the grains of the board, and prevent the material from being forced asunder by the feeding power; the heel of the stock being elastic, while the edge of the knife retains its relative graduation.

The stocks are made elastic by being bolted at the ends to hinged bars; these bars are attached by pins to bolts, which are worked in sockets formed in the side plates, to which all the stocks are adjusted. The vibrating centre of the stock hinge is in line with the cutting edge of the knife. By this arrangement, the heel of each stock is allowed to rise and fall without changing the relative graduation of the series of line cutters. This device, as will readily be seen, is a very great improvement, and is all-important in the practical operation of line cutters.

By means of the peculiar arrangement of this machine, the sole of the stock always rests upon the board in the precise plane of the preceding cut, and from that plane there can be no deviation, whether the board be narrow or wide, or in whatever part of the machine it may run. The elasticity of the stock is the same, whether it is controlled by springs at both ends, or by a spring at one end only. By this arrangement, also, a diffused and uniform pressure is produced along the whole line of elastic stocks. The soles of the stocks are broad, and allow the lumber to pass beneath them without depressing the surface.

The peculiar arrangement of the knives and stocks effectually obviates all the difficulties heretofore encountered in the use of line planers. As there is no intervening space between the sole of the stock and the board, defective and cross-grained boards cannot separate while passing through the machine; loose and detached portions of the board are held in position or pass out during the process of planing by the yielding of the elastic stocks. The graduation of the shaving and the thickness of the lumber are not changed by the removal of the cutters to be sharpened, as the most ordinary mechanic can readily replace the knives in the precise position which they occupied before their removal; this insures uniform thickness of the material planed.

The first knife of the series is made elastic both at the heel and the edge, with a fixed throat like the hand-plane. It is held in its relative position, and prevented from moving forward or backward, by the hinge-pin working in a slot. This cutter, in its operation, becomes a jacker, taking the first shaving from every board, and a shaving of equal thickness, whether the board be thick or thin; thus the whole gritty surface of the board is removed with the first shaving, which, from the vertical position of the machine, passes out before the board is brought in contact with the other knives, and they are left to operate only upon a surface previously planed.

The belts, gearing and pulleys which operate the feeding apparatus, are all placed beneath the floor of the mill, and from their position are less liable to be deranged. The gears are of great strength, capable of passing any material through the machine. The principal driving-wheel weighs 676 lbs.; and the rollers are operated by three gear-wheels, which are of great strength and equal size.

The rollers and the sectional plates form a clamping apparatus, which con-

veys the boards or plank through the machine while subjected to the action of the knives. This apparatus is peculiar in its structure and movement. There is an endless sectional platform, which is carried forward by pinions working in racks. Thus the successive plates are propelled beneath the series of cutters, rising and descending at each end in concentric grooves, and returning along the back of the machine. The sectional plates pass over a true lubricated bed, and, being made of iron and planed to a uniform thickness, they form a perfect plane while passing beneath the cutters. This device is of great practical importance in connection with the use of line planers, as any variation of the bed upon which the lumber rests not only produces an unequal thickness, but also effectually destroys the action of the cap. The cap, when placed in the relative position to the edge of the knife which is required for a given shaving, serves the twofold purpose of holding the board to the bed, and preventing the grains of the wood from separating in advance of the cutting edge of the knife. If the bed be unequal, the shaving will be unequal also. The cap must be removed from the cutting edge a sufficient distance to allow the greatest thickness of the shaving to be removed, and of necessity ceases to operate at all as the thickness of the shaving diminishes. But with the level bed of the Beardslee Machine, the thickness of the shaving is uniform, and the action of the cap is steady, equal, and unvarying. The machine is constructed entirely of metal, and in the most substantial, durable manner; it is less liable to derangement and injury than any other planing machine in use; it requires but a small proportion of the power which is requisite in the Woodworth machine to do an equal amount of work. The cutters perform more than ten times the service without requiring to be sharpened. The machine planes lumber of every kind, and planes it equally well, whether it be one fourth of an inch or three inches in thickness; it produces a beauty of surface and a uniformity of thickness never before equalled by any machine in this country. The quantity which it will plane in a given time is almost incredible, as its only limit is the quantity which can be fed into the machine.

The newly invented Matcher, for tongueing and grooving boards and plank, which is used in connection with this machine, is a device exceedingly simple and beautiful in its operation. It has never, it is said, before been equalled by any tongueing and grooving machine, either as to the quantity or quality of its work. It produces a tongue and groove far superior to any thing that can be made with the hand match-planes by the most experienced workman. It is so arranged that it is either operated separately or in connection with the surfacing machine, and lumber is run through both the surfacing and matching machines without any more preparation than is required for other machines. In one operation, the lumber can be planed on both sides in this machine, and at the same time rabited and beaded or jointed.

In the accompanying engraving, A A are the legs which support the machine; B B are the feeding rollers; C C are sectional plates that form the movable bed; D is the hand wheel which operates the raising screws; E is a box cap of the main driving shaft; F F are springs attached to the feed rollers; H H are the roller shafts; I I are universal joints which connect the rollers with the lower gear; J is the coupling which unites the main shaft with the lower gearing; K K K are concentric grooves which guide the plates at each end of the machine; L L are racks in the plates; M N is the feeding table; O is an iron shield to the plates at the feeding end; P is a guide at the tail end of the machine; Q is a lug of the main frame to attach it to the legs; S S are cogs that work in the racks; *a a* are the knives and caps; *b b* are springs which hold the heel of the stocks attached to the hinged bars; *c c* are set nuts

to the socket bolts, which adjust each knife and stock separately; *e e* are nuts to the bolts which fasten the stock to the hinged bars; *f f* are knife stocks; *g g* are steel bars forming throats bolted to the stocks; *h h* are nuts to adjust the socket bolts; *i* is a fixed bar to the head knife; *j j* are raised screw nuts attached to the side plates.

THE GREAT FOOD MARKET OF THE WORLD.

"WITHIN the memory of man," say the British journals, "no such crop of grain has ever been made in Britain." Believing that it may interest some of our grain-growing readers to know what, under such circumstances, are the prospects offered to them by "the great grain market of the world," to obtain which they were persuaded to sacrifice a domestic market that was then consuming of the fruits of the earth *more than now to the extent of fifty millions of dollars*, and but for the tariff of 1846 would be consuming *now more than then to the extent of a hundred millions*, we give them the following extract from one of the latest Liverpool prices current, now before us:—

"There is no Bacon here. Beef remains dull. The demand for Pork continues to be supplied by French and Hamburg, at rates with which Americans cannot compete at present. Irish buyers are looking for low-priced Hams and Shoulders.

"The business in Breadstuffs is without any appearance of reaction. Buyers of Flour can make rather better terms. Wheat cannot be called cheaper, but it is very dull. Floating cargoes of Yellow Indian Corn, from the Danube, are abundant at 24s. 6d. to 26s. 6d. per quarter, and prevent any demand for American at present quotations. White Corn is, however, wanted at full rates."

Four years since the farmers were promised a foreign market for food to the extent of hundreds of millions of dollars per annum. What are now the prospects may be seen by the following statement of the exports of Flour and Grain from the United States to Great Britain and Ireland, from the first of September to the close of October:—

	Flour, bbls.	Meal, bbls.	Wheat, bush.	Corn, bush.
New-York,	172,853	.....	341,566	145,913
New-Orleans,	1,194	.....	.....	.....
Philadelphia,	10,731	1,680	28,500	1,332
Baltimore,	14,708	.....	14,493	.....
Boston,	8,440	.....	.....	.....
Other ports,	.....	.....	.....	9,300
Total,	207,926	1,680	384,559	156,445
About same time last year,	365,044	1,066	348,003	90,764

We are assured that we now have three hundred millions of bushels of food for which we need a market, and for the purpose of increasing that surplus we are driving our whole population into the production of food, when hundreds of thousands of them would prefer to remain consumers of food. Is it then to be wondered at that Western spring wheat now sells in New-York at sixty cents a bushel? Certainly not. A continuance of the same policy will see it reduced far lower yet, or we greatly err.

The present prices at Chicago for wheat and flour are thus given:

Wheat, *forty-five cents* a bushel!
Flour, $2 50 to $3 a barrel.

How this is operating upon the farmers may be seen by the following ex-

tract from the *Chicago Democrat*, a journal that, from its title, would seem to be good authority for the working of *British* free trade :—

"PRESSURE AT CHICAGO.—We find that our moneyed institutions are curtailing their loans, and, to meet this, we find all our business men making out and sending around their bills. A great deal of real estate has been purchased the past year, with one quarter of the purchase money paid down. There is now an anxiety to get the money for a second payment; and where persons have it not, they cannot obtain it without the greatest sacrifices, as *there is no demand for land now at the prices of the past season.*

"A great deal of money has been loaned to farmers on the strength of the present crop. *They can hardly pay the interest*, and are striving to get an extension for another year. *We never knew so many people from the country trying to borrow money* as there has been the past week.

"With the close of navigation thousands of persons are thrown out of employ, and must have the means of living through the winter. And it would be calamitous to the business of the city next spring not to have all those men ready in our city for the revival of business at the opening of navigation.

"It has been customary in times of a pecuniary panic to turn our eyes to the East for money; but there is a greater panic there than here. It occurs to us that our best reliance in a time like this is *in the procurement of a loan* by the Central Railroad Company, sufficient to enable it to commence its work. This would bring a large amount of money into our State, and consume a large amount of produce, lumber, and merchandise generally. If any thing can meet the blow of adversity that now threatens this region of country, it is the success of the Illinois Central Railroad Company in its present efforts to secure a loan.

"From the small stock of lumber in our city, compared with the increased population and business of the country, we infer that our lumbermen are somewhat alarmed at the Eastern panic, which is gradually extending its way westward. And *the low price of produce undoubtedly has some effect upon their business.* All our farmers look to their crops to procure the means of extending and repairing their buildings. *This year the farmers can hardly make their year's ordinary expenses balance, and so they have nothing to expend in lumber.*

"The old adage of 'Wheat in and lumber out' is not repeated this year."

How will it be next year? The farmers are now every where storing up their crops and borrowing money at high interest, waiting for a famine in Europe; but what will be the price of wheat, suppose the famine not to happen before the debts mature?

VOLCANIC ACTION—ITS EFFECTS ON THE ATMOSPHERE.

THE Academy of Sciences, Paris, some time since, appointed M. Lewy to make an examination of atmospheric air in New-Grenada and other parts of South America, and also in Europe; upon which he has based a very interesting account of his labors.

He has followed the accurate method of M. Regnault, of analyzing by volumes; and so minute are his investigations, as to descend into the infinitesimal quantities of the one ten-thousandth part of a degree of the eudiometer. As to France, his labors agree with those of Gay-Lussac and others; that is, in volumes of oxygen, 20.80; of nitrogen, 73.20; of carbonic acid, .004. In New-Grenada, he took the mean of eleven observations at different localities, and found that in 10,000 volumes of pure atmospheric air, he had uniformly 1201.425 of oxygen, 7894.557 of nitrogen, and 4.008 of carbonic acid. These proportions are almost identical with those observed in various parts of Europe. He remarked, however, that the air of New-Grenada presented once or twice a year a very remarkable increase in the proporion of carbonic acid, attended with an appreciable reduction of the oxygen, and causing a very sensible alteration in the constitution of the atmosphere.

M. Lewy ascribes this phenomenon to volcanic action; the frequent discharges of lava clearing the soil, burning up the forests, and setting free large quantities of the former gas. He has found ten or twelve times the usual proportion of the acid at those times, and a corresponding absence of oxygen. To the same volcanic causes, M. Lewy lays the extraordinary development of vegetation in South America. The immense volumes of carbonic gas projected into the air contribute, he thinks, largely to nourish the prodigious growth of tropical plants, which frequently furnish us the spectacle of a sizeable tree as a

representation of what in less genial latitudes is presented by a lowly bush. Carbon, it is well known, constitutes one half the composition of wood.

In examining the atmosphere at the level of the sea, M. Lewy has arrived at some curious results. In daytime he found the air contained a little more of oxygen and carbonic acid than at night. The farther he proceeded from the shore, the more marked the difference became. He attempts to account for the fact by suggesting the probable action of the solar rays, which, by warming the water during the day, determine the disengagement of a portion of the gas held in solution. Air extracted from water is known to be more highly charged with oxygen and carbonic acid than the atmosphere.

That volcanic action produces a very material change in the temperature of the atmosphere at a considerable distance from the seat of the disturbing power, has been fully testified by the numerous observations of Mr. Meriam, taken on Brooklyn Heights. M. Lewy's theory of the phenomenon, therefore, appears to us as a very plausible one.

SOME POISONS AND THEIR ANTIDOTES.

THE effect which some metals in an oxidized state have upon the human body is very singular.

Gold and silver in a pure state may be taken into the stomach without producing any injurious effect; but a single grain of white arsenic will soon curdle the life-blood, and lay low in death the stoutest of men. Many other substances, as well as arsenic, produce as fatal results.

The effect of "animal poison" upon the human frame has been known from all ages, but the reason why the tiny drop ejected from the fang of the snake, or the bite of the scorpion, produces such tremendous effects upon the whole system, is not so well known; how true it is, "man is crushed before the moth." The effect of poisons taken inwardly has also been known from the earliest ages, and a common method of putting victims to death in Greece was by the poisoned bowl. The wise Socrates fell a victim to this kind of death.

At an early age, the alchemists devoted as much time to the discovery of antidotes for poisons as they did to discover the philosopher's stone. All the knowledge derived from them, however, respecting this branch of chemical science, is of scarcely any worth whatever. Chemistry is a modern science in every respect, and in no one instance more than the investigations of such men as Christisson into the nature of poisons. The virulence of any poison is known only by experiment. Poisons are soluble; that is, they pass into the blood, and injuriously affect the functions of life. The object of the chemist to render poison inert is to make it insoluble, when it will pass away and escape without producing any deleterious effect.

To do this in the stomach, is to administer an antidote which will meet every condition of the human system.

There is an acid used in many houses for removing stains from furniture and clothes, and for cleaning brass, named "oxalic acid." It greatly resembles common salts, and has been oftentimes taken for them by mistake. If this poison is taken into the stomach, it will be rendered inert by speedily drinking down a quantity of magnesia or lime-water. Another poison is corrosive sublimate, which is also used in families for destroying bedbugs. If this is taken by children or others by mistake, the remedy is to swallow as quick as possible the white of eggs; and if these are not convenient, some pearl-ash and dissolved glue. Of these facts, every person should be informed. These substances combine with the poison in the stomach, and form an insoluble, inert compound.

Hydrated protoxide of iron, which can be purchased at the druggists, if quickly administered, is an antidote against white arsenic; and sulphuric acid is an antidote for lead. There are many poisons, however, for which no human hand has a remedy, because their action is so rapid upon the well-springs of life. But some more ought to be said about "lead poison," as it is a very extensive harm-doer. Painters' colic is caused by drinking water impregnated with lead in mines, or by the metal being introduced into the system by inhaling lead dust. The metal is soluble when introduced into the body, and is the cause of many acute pains. Sulphuretted waters, or weak sulphuric acid and water, renders lead insoluble, and has therefore been prescribed as a remedy for this disease. But it has been found that the lead, though rendered inert by being insoluble, is still diffused through the body, ready, when some favorable condition arises, to act injuriously again. It was discovered, not long ago, that the iodide of potassium is capable of dissolving the compounds of lead, or rather of bringing it to a new condition, whereby it becomes soluble and can be washed away.

If a person be poisoned with lead, the system struggles to throw it off through his

kidneys, and it can be detected in the urine. The remedy is to give sulphuric acid in water, in strength a little sour, when the pain will disappear; but the lead remains in the system. Then give a dose of iodide of potassium, and slight pains return, but the lead will be disappearing in the secretions. By repeated small doses of sulphuric acid and water, and the iodide of potassium in small doses at some intervals afterwards, the lead is effectually driven from the system.

This iodide of potassium has the same influence in driving mercury from the system, and is one of the grandest discoveries of modern times in medical chemistry. The test for the entire removal of lead from the system is, when a pretty large dose of the iodide causes no acute pains.—*Scientific American.*

From the Soil of the South.

RENOVATING SOUTHERN LANDS.

Mr. Editor:—I have been reading and thinking about our condition as farmers and citizens. Our country was once fresh, our lands rich, and they brought forth abundance of the luxuries and comforts of life. Labor received a good reward, and our hearts were made to rejoice, from the fact that our lands were productive. But, alas! those days of prosperity are gone; the fields that once brought large and remunerating crops, a great many of them, are reduced to sedge grass, all sarcified with gulleys. I speak to our shame, for it is our fault; and that man is ungrateful to posterity who leaves his plantation worse than he found it. Every man should improve his lands every year. I am convinced that this can be done, and in order to which, I will give you a plan, the result of much study and some experience. First—If our lands are hilly, we must ditch them properly. Next—A rotation of crops and rest of our land are necessary; and to do this, we should have our farm divided into four fields; plant one in corn, one in cotton; sow one wheat and oats; let the other field rest. Take all fields in rotation, and our land is all rested every fourth year. Plant the first field in corn, (and plough it deep while sluggards sleep, and you will have corn to sell and corn to keep,) and when we plough our corn the last time, sow peas—the tory or the redripper is, I think, the best. Gather your corn as early as possible, turn in your stock, and eat out the field; then start a plough, and we should be governed by circumstances what sort of plough. If the ground is coated over largely with pea-vines and grass, we should apply a good turning-plough; but if the ground is clean, a square point scooter and mouldboard will answer; break the field close and deep; let it lie by, till you want to sow your wheat, (forward wheat is best for our climate;) prepare the seed by soaking it in a brine made of common salt from six to eight hours, and while wet, roll the wheat in slacked lime; you can sow it wet or let it get dry; about from three pecks to a bushel is thick enough on common land; lime is a preventive of smut, and gives the young plant a vigorous growth; the salt drives away insects Wheat should be ploughed in deep; one inch is deep enough; and if the ground is rough, it is best to pass a rake over it. It is owing to the rough manner that we sow our wheat that we have so many failures in that crop. After the wheat is cut, turn in your stock to glean your field; and, about the 1st of July, sow and plough in about a peck of peas per acre. These are intended for manure, and about the last of September, they should be turned under with a turning-plough. This field now goes to rest for one year; but it is best to sow another crop of peas in July the same year. You rest your field, and turn the vines under, the next September; by this time, we have three or four coats of vegetable matter turned and mixed in our land. This, with the rest it has received, will prepare the land to make a good crop of cotton without any more manure. Nevertheless, we should manure every acre we plant, and to this end, we should have a ditch in our lot, constructed in such a manner as to catch all the wash. It is best to have this reservoir covered with boards. Every thing in the shape of manure should be put in this ditch early in the spring or season as possible. Start your plough or ploughs, as the case may be; run a furrow as deep as you can with a shovel-plough, and, if you think it necessary, run another in the same furrow; commence hauling from your ditch and every other place you can get any manure; place your manure in the furrow, and with a turning-plough fling a bead on it; continue so the field over.

Corn should follow cotton, and should be planted in the cotton ridge. Run a furrow under the old cotton stalks, but above the manure; plant your corn, and run one furrow on each side; when the corn starts to come up, run a board or horse-rake over it. Corn planted in this way is benefited by the manure of the previous year almost to as large an extent as if the manure was put there the same year. There are many advantages in manuring on this plan, but I have not the opportunity at this time to urge them.

Wheat should follow after corn. This plan of rotation, rest, and manuring, will have the desired effect, I think; and I recommend all the farmers at least to give the above a calm, cool, and deliberate consideration. I do not say the plan is clear of defects; it may be improved on; and I hope some one more able than myself will take it into consideration.

Come up, gentlemen, and put your shoulder to the wheel of prosperity; give one steady pull on the subject of renovating our lands; and if we should succeed in the experiment, and bring back our lands to their virgin fertility, it will be a day of rejoicing to all.

Very respectfully, yours,

Pine Mountain, Harris Co., Ga. J. H. WILLIAMS.

PLOUGHING BY STEAM.

Lord Willoughby d'Eresby, an opulent and practical cultivator of the Grimsthorpe estate, near Bourne, England, has recently made several most successful experiments in opening and pulverizing the soil by an engine. A writer in the *London News*, describing them, says that steam-ploughing is now no longer a problem. The field selected for the last experiment had grown a wheat crop, and was of good tillable soil. The engine was placed on a movable tram road at the end of the field. By way of testing the relative powers, the plough, a double one, with reversed shares and coulters, was drawn in one direction by horses, and contrarily by steam. The horses, four very powerful animals, had much labor to drag the implement, and that only at a slow pace; whilst the engine, of 26 horse power, hurried it back as fast as a man could fairly walk to conduct the plough. After several "bouts," a subsoil plough was attached to a guage of nine and afterwards twelve inches. This additional burden, which the horses could not possibly have drawn, evidently steadied and improved the motion, and left the work in a most satisfactory manner. Harrows were afterwards appended with an equally pleasing result. The ploughing took place across old land, which showed in some places considerable dips. Two engines placed parallel at each end of the field would, without difficulty, with only a double plough, complete four acres of land in ten hours, and, if required, subsoil it too. The relative expense of ploughing 24 acres of land is given as follows: by horse, £9 12*s.*, by steam, £6 16*s.* By steam-power, the twenty-four acres would be completed in a week. It would require at least ten horses to plough it in the same period.

Justice to an American Author.—Perhaps the ablest of the French writers on Political Economy is M. Bastiat, and his ablest book is the *Harmonies Economiques*, on which, more than on all his other productions, his reputation has been founded. The fact that the doctrines and ideas which give value to that work were not original with Bastiat, but were borrowed without credit of Mr. Henry C. Carey, has several times been alluded to in our columns, and we are glad to observe that the claims of our distinguished countryman are now being admitted in France. In an article published in the *Journal des Economistes* for October, M. de Fontenay, the intimate friend and literary executor of Bastiat, finally admits that the latter was not himself the discoverer of the principles he so successfully employed. In an article on Rent, M. de Fontenay, after stating the demolishing argument against the famous theory of Ricardo, goes on to inform his readers that "this capital refutation of Ricardo's theory was first indicated to me by Bastiat, who, as I believe, *had borrowed it from Carey*. Its fundamental idea is eminently just." This confession is confirmed by the editor of the *Journal*, in a note to the same article, in which, speaking of the various attempts to refute Ricardo by writers who had not previously prepared themselves by thoroughly studying and understanding his theory, he says that "Mr. Carey is the only writer who seems to us to have regularly attacked it." It is a matter of course that the controversy relative to the authorship of the new views on the subject of rent and population, first propounded by Mr. Carey, and afterwards reannounced by Bastiat, should have called to them a degree of attention which their intrinsic importance so richly merits. They are now very widely and earnestly studied in France, and have been made the subject of discussion for the next prize medal of the politico-economical department of the French Academy. We notice these facts with satisfaction, not only because they show that justice is being rendered to our countryman, but as an evidence of the spread of sound ideas upon a subject of great practical importance.—*New-York Tribune.*

PARTING WORDS.

BY HANNAH C. PELHAM.

The parting hand I oft have pressed,
When bidding friends farewell,
While rising sighs, but half suppressed,
Spoke more than words could tell.

Well may the lips forbear to move
In friendship's parting hour;
For words alone are vain to prove
Affection's depth and power.

I value not the sad farewell,
Nor yet the brief adieu;
One silent gaze alone can tell
What language never knew.

But give to me, in that stern hour
When friends are forced to part,
The silent tear, that speaks with power
The language of the heart!

COTTON MANUFACTURES DECREASING.

The following is the number of bales of cotton manufactured per annum in the South:—

To September, 1849,	110,000 bales.
To September, 1850,	107,000 "
To September, 1851,	60,000 "

This is a deplorable result. But it has decreased in the North too:—

For the year 1849-50,	487,000 bales.
For the year 1850-51,	404,000 "

The increase of cotton exported to foreign countries over last year, is estimated at 398,555 bales. This is not the best evidence of the prosperity of cotton manufacture in the United States.—*Alabama Paper.*

Certainly not! Nor is it either the best evidence of the prosperity of the cotton culture in the United States. The price of the whole crop is fixed by the price at Liverpool, and the latter is high or low precisely as the quantity struggling to pass to the consumers of the world through the spindles and looms of England is large or small. When it is large, the friction is immense, and then it is that the British owner of spindles and looms grows rich; but then it is that the planter is impoverished, *for he it is that pays for all the friction*, whether on the road, in the ports, on board of the ships, or in the factories. When the quantity seeking a passage through the machinery of Britain is small, the friction is small; and then it is that the owner of that machinery obtains small compensation for its use, but then it is that the planter grows rich.

The object of the tariff of 1842 was that of diminishing friction by bringing the spindles and looms to take their natural places among the cotton-fields of the South; and it was doing its work, for of the crop raised in 1848 there were there consumed no less than 110,000 bales that would otherwise have been pressed on the market of England, with great diminution of price.

The object of the tariff of 1846 is that of increasing friction by removing the spindle and the loom to a distance from the producer of cotton; and it is doing its work, for of the crop raised in 1850, the Southern consumption has fallen to 60,000 bales, while the Northern one has diminished more than 100,000, and these 160,000 are now pressing in the market of England, the effect of which is seen in the fact that prices are steadily falling, and are now (Oct. 18) in New-Orleans but seven cents per pound for middling, whereas *that same cotton would at this moment sell for twelve cents per pound had we two hundred thousand bales less for which it was required to seek a market abroad.*

Had the tariff of 1842 remained untouched, the domestic consumption of

the past year would have been little short of a million of bales, and we should have been every where building new mills preparatory to increasing the consumption to eleven hundred thousand, whereas we are now every where closing old mills preparatory to a reduction of the consumption to four hundred thousand. Under the one system we should now have for export of the present crop a million and a half of bales, the price of which would be fifty dollars per bale, giving for a crop of two and a half millions *one hundred and twenty-five millions of dollars.* Under the other we are likely to have for export 2,100,000 bales, at less than thirty dollars per bale, but which, at thirty dollars, will give for the crop *seventy-five millions of dollars;* and this difference of fifty millions of dollars is what the planter pays for the support of the British monopoly system, called free trade. Yet can he not be taught that he it is that pays for all the friction between the consumer and the producer. He knows that the more numerous the ships the lower the freights, and therefore does he desire an increase in the number of ships. He *should* know that, on the same principle, the larger the quantity of machinery for spinning and weaving cotton the smaller will be the charge for its use, and yet every step he takes tends to diminish the quantity of machinery and thus to increase the power of machine owners to tax him for its use. The object of the British system is to keep down the quantity of machinery and increase the charge; and such is the tendency of the tariff of 1846. The object of THE AMERICAN SYSTEM is to increase the supply of machinery and diminish the charge; and such was the tendency of the tariff of 1842. It is really time that the planters should study the facts for themselves, and cease to be led by demagogues whose only object is that of living at their expense, and who are ever ready to pander to prejudices if by so doing they can obtain office for themselves. For want of the disposition to examine and understand for themselves, they suffer an annual loss in freights, loss of labor, exhaustion of the soil, and diminution in the value of the land, that would not be compensated were Great Britain to give them all the merchandise she exports to all the world.

For the Plough, the Loom, and the Anvil.

MANAGEMENT OF ORCHARDS.

BY W. TAPPEN.

MANY people complain about the unproductiveness of their orchards, and their unsuccessfulness in propagating and cultivating fruit trees. Now, there must be some cause for this failure in raising and producing fruits. If the climate is favorable for the propagation of fruit trees; if the location be a good one, and if the trees are rightly managed, and the ground which they occupy be well cultivated, there is not the least obstacle in the way to prevent success in the production of fine fruit. We have ever been successful in producing nice apples, &c., and our success is more to be attributed to the following plan of managing the orchard than to any thing else that occurs to me on the subject.

We have "our" hog-pen situated at one end of the orchard, so that the swine can make their ingress or egress into or out of the orchard at all times, except a few weeks in the fall, when apples, &c., begin to fall. By letting them have free access to the orchard, we succeed in producing the choicest kind of fruit. The amount of manure which they deposit under the trees and in the orchard causes the ground to be enriched, and produces a rapid

growth of grass, which is fed down by the calves, &c. And every one who is acquainted with the nature of a hog must know that he is a great animal for practising friction or rubbing against whatever comes in his way. Through his rubbing, the bodies of the trees are kept smooth, that is, at the collars of the stems, as fruit culturists say, and thus a healthy action is apparently given to the whole plant.

We never mow our orchard, holding to the principle that grass only tends to absorb the very substance which causes fruit trees to flourish and become productive. And another thing: if orchards are converted into meadows, the ground around the trunks of the trees is almost sure to be filled with ants and other insects. When hogs and calves, &c., are allowed to run among the trees, these insects most generally disappear. We have been in the habit of letting our hogs and calves, &c., run in our orchard for years, and when other people in the vicinage have failed of getting fruit, we have most generally been successful in raising the very best kind of apples, &c. Undoubtedly, had we kept the hogs, &c., out of the orchard, and let the grass grow so high as to stifle and injure the growth of the trees, we would not have got any better fruit than many of our neighbors.

Then, to sum up, if your orchard is favorably situated, and if the climate is congenial to the growth of trees, let your hogs, calves and poultry run in your orchards, if you would be blessed with nature's finest productions. The idea, in my humble estimation, of ploughing orchards when the trees have become large, is not at all a consistent one, for ploughing and harrowing only tend, and, in fact, do destroy the lateral roots of trees, and materially injure the fibres and spongials, which every one must know are absolutely necessary to produce a vigorous growth in plants.

GAMBLING CHARACTER OF THE MONOPOLY SYSTEM.

The object of the British system called free trade is to separate as widely as possible the consumer from the producer, and to place both entirely in the power of the middleman. The planter sends his cotton to a distance to be sold, and months elapse before he ascertains the product, and during all that time he is subject to the contingencies resulting from peace or war, large or small crops, enlargement or diminution of the currency; whereas the Manchester manufacturer buys and sells within the week, and always at such prices as enable him to make a profit. The losses of trade are thus almost invariably thrown upon the farmer and planter. It may be said, however, that most of them sell here; and such is, to a great extent, the case; but, even then, the losses resulting from the changes fall, to a great extent, upon the vendor. If prices rise, the factor pockets the profits; but if they fall, the factor breaks, and the planter is ruined.

The greater the distance between the producer and the consumer, the greater is the power of the middleman, and the more gambling is the character of the trade. If proof of this be desired, we need only refer to the present condition of trade in California, where the consumption consists almost entirely of articles brought from a great distance, and where, as a matter of course, it is found that the real gold mine is behind the counter in San Francisco, and not in the placer of the Sacramento. In illustration of this, we take the following from one of the journals of the day, believing that there are few of our planting or farming readers who will fail to find in it a description of the state of things that necessarily results from the separation of the consumer from the producer, and under which they have at all times suffered,

as now suffer the producers of commodities for the Californian market. The nearer the consumer and the producer, the larger is the value of the products of the land, and the more steady is that value; and the greater the distance, the smaller is the value, and the greater the tendency to variation:—

"There are some good indications of a revival of salutary trade. A large portion of the surplus stock has been passed through the auction-room, and prices begin to rise on some articles. If I am not much mistaken, the coming winter will witness some curious freaks of traffic. *The moment it becomes known that any commodity with which the market has been glutted is becoming scarce, that moment the demand begins, and the price flies up from nothing to extravagance.* Money will be made profusely on some articles, but the difficulty at present is to divine what those articles are."—*California Letter.*

WESTERN ILLINOIS.

THE following extract is from a letter written by a young man in Western Illinois to a friend in this city:—

"Could you look with me upon the farms of from 50 to 1000 acres, under what you would call in New-England the highest state of cultivation, and hear that three or five years ago the plough had not touched its soil, a tree had not made its appearance, but all was one vast ocean of natural turf, you too would be astonished. I wish you could spend the summer season here, and see the facility with which the farmer plants, sows, cultivates, and harvests his crops. He breaks the sod with three horses and a plough that turns a furrow of 14 or 16 inches, all ready for his grain; or, if old ground, two horses, ploughing three acres per day, no stumps or rocks interfering. Small grain is sowed with a machine, drawn by either one or two horses, which sows from ten to twenty acres per day. Ground is marked out for corn with a machine that furrows three rows at once, three boys following, dropping, and then a brush covering it up; or, in place of the latter, three ploughs, or three men with hoes, as the case may be; it is cultivated with ploughs, one man tending two, a horse attached to each. When ripe, the wagons are driven into the field, and the corn husked from the stalk, leaving the stalks for the cattle to feed upon during the winter. In this way he raises from fifty to eighty bushels of corn per acre, worth at home 25 cents, and in Pekin, our nearest market, sixteen miles from here, 30 to 40 cents, shelled and winnowed by horse-power. Wheat and grass we cut with a machine that cuts ten or fifteen acres per day. It is threshed and cleaned by horse-power, and yields twenty or thirty bushels to the acre, worth 60 or 80 cents. In this railroad or telegraphic way of farming, we realize several hundred per cent. more than the Eastern farmer from his labor and capital; for where one man cultivates ten acres there, he will cultivate fifty here with less labor; and instead of paying $20 or $40 per acre for land, $10 or $15 are the best rates here.

"The rapidity with which this country is settling up is astonishing. When Delavan was located, it was thought to be almost out of creation, being so far from the edge of the prairie, (five miles;) but now improvements are being made as far beyond us as we can see. Three years ago, there were but three prairie-breaking ploughs within ten miles; now there are over eighty. Land which at that time was sold for $1 is worth $5. Within a year past, more than twenty houses have been built within sight of us."

We insert the above extract of a letter, written in all the frankness and truth of friendship, to a relative of the writer, now residing in this city, partly with a view of showing the immense and constantly developing resources of our Western lands, and also to introduce into the agreeable picture some improvements and finishing touches of our own.

In the vicinity of this fertile tract, capable of producing already seventy-five or eighty bushels of corn per acre, at a mere nominal expense of cultivation, we would propose to erect mills, factories, school-houses, a church, dwellings, work-shops, smithies, stores, &c., &c. "But for what purpose?" inquires the anxious reader. "What can be the motive for such impolitic and silly measures; such a waste of time and expense in the erection of buildings that would not be needed and cannot be occupied?" But we can easily explain, and, we are

quite sure, maintain the position which we have taken. Instead of planting the entire surface of these fertile fields with corn, and thus contributing, perhaps, to an overstock of that single product in market, we would devote a portion to flax, to which the soil is admirably adapted, and will produce crops equal in quality and quantity to those in any part of the world; introduce the most approved methods of preparing it for manufacturing purposes; and we would at once find very advantageous employment for the factory. The seed obtained from the crop would at once afford business for the mill in grinding, pressing, and preparing the oil which it contains. The factories, mills, &c., would, of course, make business for smiths, machinists, millwrights, and operatives, who would occupy them; and the numerous families thus drawn together would constitute a nucleus, around which would cluster, in a very short time, an extensive and increasing population; a home market for the corn, wheat, and vegetables would be created, thus saving the expense of transportation sixteen miles to "the nearest market," that being nearly 50 per cent. of its value, and, notwithstanding, cheap enough to enable the manufacturer to produce his thread, linen or oil at a reduction in cost nearly equal to the entire transportation of the raw material to the distant commercial cities, the headquarters of trade, its storage, one or two commissions, &c., &c., together with the additional advantage of lower rates of labor, arising from the reduced expenses of living where almost the entire necessaries of life may be so easily and cheaply procured. And thus a happy reciprocity would exist between the consumer and the producer, resulting in very great advantages to both; and the principle, carried out, would save to the country untold millions, which are now sent abroad to pay for the very articles that might be, with an adequate protection by Government against *foreign* "free trade," produced by ourselves.

As we have long and earnestly advocated placing the "loom" and the "anvil" beside the "plough," these views will not be new to many of our readers; and we trust the time is not far distant when the true principles of political economy will be understood and carried out both by our Government and by individuals.

THE WOOL GROWERS.

"It appears to be generally conceded that fleece wool has declined full 10 cents per pound from the highest point, and even at that price buyers are not eager. We think farmers will conclude that in June, when we advised immediate sales, we must have given wholesome counsel. We omit quotations. Fine fleeces can be bought at 38 to 40 cents; ¾ blood at 35 cents; and common at 32½ cents." *Dry Goods Reporter.*

Why is this? Is it from any increase in the quantity sent to market? It is not. The whole that has passed over the New-York canals in the present year is but - - - - - - - - - 10,272,626 pounds.
Against, in the same months of 1850, - - 11,519,256 "
And in those of 1849, - - - - - 11,553,611 "

In 1842, the quantity sent to market by the Pennsylvania and New-York canals was only 4,800,000 pounds, but by 1847 it had risen to 16,325,000 pounds, and the consequence of the sudden increase was, that the price fell to $33 per hundred pounds for fleece wool. Since then the production of wool has been stationary, the whole quantity that passed over the two great canals in the last year having been only 16,400,000 pounds. This year it appears to be even less, and yet the price has fallen to little more than that of 1847, and the probability is that it will fall still lower. If the wool growers desire to understand the cause of this, we recommend them to visit a few of the

abandoned woollen mills, and there to study the fact that our import of woollens in the last fiscal year is greater by about eleven millions of dollars than it was in 1847, and that those goods were obtained at the cheap price of *bonds bearing interest.* Can they wonder that the price of wool falls, *notwithstanding the fact that its production remains stationary*, when they advocate a system under which the *power to consume diminishes faster than the power to produce?* Assuredly not. Prices have fallen with the diminished power to consume; and unless we greatly err, they are destined yet to fall far lower, and to continue low until the wool growers shall determine to make a market on the land for the products of the land.

For the Plough, the Loom, and the Anvil.

THE POTATO DISEASE.

Mr. Editor:—I have recently noticed an article, credited to the *Plough, Loom, and Anvil*, giving the results of experiments resulting from the application of straw in planting potatoes, which it appears to me is well worthy of the attention of all cultivators.

In the progress of the potato disease, the following facts—so far as my observation has extended, and I have endeavored to make careful and correct notes in the matter—have uniformly developed themselves:

In every season of its ravages, we have first seen its effects on close or compact soils; and from these it has extended, though with diminishing effect, until it reached the highest sands, where, so far as we are able to judge, the crop has suffered least from its prevalence. Now, I have no idea that the *soil* is the primary cause of this malady, any more than it is of the cholera, or many other diseases to which the human frame is liable; yet it may be, and circumstances go to show that predisposing causes exist in it, which simple and apparently inefficient remedies may have the effect to remove; and I have often thought, when I have looked back to the days long gone by, when every spring found a fine pile of swingle tow at almost every farmer's barn doors, and remember how that swingle tow was all carefully thrown into the potato hills at planting time, and how far superior, both in size and quantity, and how fine in quality the potatoes were, dug from the parts of the field where it was applied, compared with others, that if the days of flax and swingle tow would but return, we might find a mitigation to this sad disease in its application as in olden time. But in these days of progress and refinement, we should not know where to find enough of the article to enable us to make the experiment. If any one is more fortunate, and has it at command, we wish they would try it next year, and note the result. The rationale of the matter would probably be this: it would keep the earth moist and loose around the tubers; it would also preserve an equality of temperature, (rather cool,) and a proper degree of moisture; enough in dry, and none too much in rainy weather; all of which the potato seems properly to appreciate.

The straw noted in the experiment you cited, probably effected all these objects. Hence I am fully confident that its application in the way specified will be effectual on many and probably beneficial on all soils; at least, let it have a general trial, and let the effects be reported.

Has any one ever tried planting on land recently subsoiled, and noticed the difference, if any, between those planted on such lands, and those planted on ground of a similar nature not subsoiled? If it has been done, we have seen no report; or if any, it is now out of mind. We have confidence that this or

some other method of deepening and loosening the soil will prove highly beneficial in checking the disease, inasmuch as all farmers must know that the soil, especially of clayey lands, has been growing shallow and more compact for a long time; and many such lands have become cold, stiff and inactive, just such as no crop will succeed in to profit, and wholly unfit for all root crops.

We have no confidence in the theory that bugs and worms are the causes of the disease, but firmly believe it to be atmospheric, and that its effects are accelerated or retarded by predisposing causes in the soil and manner of cultivation; and we have no doubt but the most efficient remedies will be found in something simple, as a small quantity of straw, or some improvement in the manner of tilling the land.

Yours truly, W. Baron.

Richmond, Mass., Nov. 20, 1851.

How to save Poultry Manure.—Having learned the value of poultry manure, we suppose our readers would like to know what is the best method to save it:—First, build a poultry-house, if it be no more than a rough scaffolding of poles or slabs, laid upon crotches, forming a double pitch roof, with end boards in winter, to keep out the wind and driving storms. Under this place parallel roosts; the manure during the night, then, will all drop down in a narrow row beneath. Here place light loam about a foot deep, rather wider and longer than the roost, and give it a sprinkling of plaster of Paris an inch thick. When this is covered an inch deep with manure, give it a layer of loam four inches deep, and another sprinkling of an inch of plaster, and so continue. In the spring, mix all well together, keep it free from the rain, and use it at the rate of one pint to a hill of corn, or in a corresponding quantity for cucumbers, squashes, pumpkins, melons, peas, onions, strawberries, or any other fruit, vegetable, or grain, requiring rich, warm manure, and our word for it, you will have a large crop of a superior quality.—*The Plough.*

From the Germantown Telegraph.

Danger of Candle Grease, Marrow, &c.—It is confidently believed that disease has been introduced into the human system by the mere application or use of common "candle grease" in cases of chapped hands or lips. Candles are often made of tallow, taken from animals that have died of some foul disease, by which it is rendered unfit for using in this way. A little marrow taken from the bone of a healthy cow or bullock, and melted in a cup, is excellent for chapped lips or hands. Making a profuse lather of Castile soap on the hands, and rubbing them gently until the lather is absorbed and nearly dried up, is good to soften the skin that inclines to be husky. M.

Hints for Housekeepers.—Ribbons of any color should be washed in cold soap-suds, and not rinsed. Iron them wet, and they will be stiff and nice as new, except some kinds of pink and blue, which will fade. These may be dyed to look as well as ever. Dip the blue in a little cold blue ink and water, and the pink in carmine from a pink-saucer, according to directions, and they will be perfectly restored. Marble fire-places should not be washed with suds; it will, in time, destroy the polish. After the dust is wiped off, rub the spots with a nice oiled cloth, then rub dry with a soft rag. When you rub the knobs of your doors, use a piece of pasteboard as large as your two hands, with a small hole large enough to just encircle the knob in the centre, and a slit in the paper to let it in. This, slipped on, will keep off all soil from the paint, and is a nice way of doing it.

Washing Compound.—The recipe for making this compound is often sold for considerable sums of money. Dissolve 20 lbs. of hard soap in one gallon of ley, over a slow fire, and let it boil, stirring it frequently. Now set aside to cool, and then add one quart of spirits of turpentine and one pint of strong spirits of ammonia. When cold, cut it into bars, and wrap closely in papers, and put away for use. It is far superior to common bar soap, and will save nearly one half the labor of washing.

To Cure a Felon.—Take one table-spoonful of red lead, and one table-spoonful of Castile soap; mix them with as much weak ley as will make it soft enough to spread like a salve, and apply it on the first appearance of the felon, and it will cure it in ten or twelve hours.

For the Plough, the Loom, and the Anvil.

THE AGRICULTURAL PROSPECTS OF MICHIGAN.

MESSRS. EDITORS:—I have received a circular from you, by which I am very glad to learn that the *Plough, the Loom, and the Anvil*, so ably and successfully edited by the late COLONEL SKINNER, is to be continued. Mr. Skinner was a devoted friend of agriculture, and to him the farmer is more or less indebted for the present advanced state of agriculture in this country. The farmers, as a class, "see through a glass darkly;" they need to have the veil of prejudice drawn from their eyes, that the light of science may be admitted.

Agriculture in Michigan may not be advancing as rapidly as in many of the older States, but I think in some respects we have the advantage over many of the Western States. Emigration to this State was almost entirely checked in 1837, in consequence of a large amount of prairie land coming into market in Wisconsin and Illinois, and the deranged state of the finances of Michigan, together with her embarrassment in making the five million loan, so called.

The facilities for making a beginning in a new country were better on a prairie than on timbered land. The prospect of immediate return was greater, and the necessities of the emigrant compelled him, as he thought, perhaps, to go where he could raise his field of corn, &c., the first season, which he could not do on the timbered lands of Michigan. The temptation was very great, when broad acres were lying before them untouched, rich in all the elements to produce the waving grain, with no obstruction in the way. They could put in the plough and go miles on a straight line, if they wished. They fancied themselves already rich, and felt thankful they had passed by the timbered country of Michigan, and found a garden to begin upon; but what has been the result? They have tried it now for several years, and the crop has been cut off mostly; and what they have raised is inferior in quality—so much so, that they are obliged to mix it with Michigan wheat to make salable flour. They have undoubtedly mistaken their own interest in depending upon their wheat crop, when they should have raised stock. The farmers of Michigan raise a large amount of wheat, and that of the best quality. The climate is favorable. She is nearly surrounded by water, and her forests afford a protection against the piercing blasts of winter. The wheat does not winter-kill. Her soil is well adapted to the wheat plant, and the farmers are greatly improving in their mode of cultivation. The system of thorough drainage and deep cultivation is being adopted with the best results. The average amount per acre is greatly increased; in some instances, over sixty bushels per acre has been raised, and forty-six, take a field together. When these results have been obtained, the old system of summer fallowing has been entirely superseded by a system of rotation of crops, with the land in clover at least one year, and a crop turned under ten to twelve inches deep. Agricultural papers have induced farmers to try the experiment, and practical experience shows the real benefit. But the farmers of Michigan have long since found that it was not wise to *depend* upon the wheat crop; for although with good management they are pretty sure of a good crop, still, the price may be so low as not to remunerate them for their labor. The raising of sheep, cattle and horses has been found to be very profitable, and become branches of husbandry of considerable importance. I have no doubt but the county of Oakland sold this season more than $250,000 worth of wool. Wool has

sold from 40 to 46 cents per lb., which is considerably higher than any year before since they have commenced raising it. All the finest cattle are bought for an Eastern market, at greatly advanced prices from previous years. Cattle are shipped by steamboat to Dunkirk, and thence to New-York by New-York and Erie Railroad. There can be no necessity for the agricultural emigrant to go beyond Michigan for a home. He can get land here of the best quality at Government price, and find a ready market for all his surplus product, with a climate more favorable for the cultivation of wheat, and a soil equal to any State in the Union, and facilities for a market much superior to many of the Western States.

Respectfully yours,

A. C. HUBBARD.

Detroit, Oct. 27, 1851.

NEW COTTON PLANT.

THE following notice of a new cotton plant would have, as we think, much interest for our cotton-growing readers, were it not that it is likely to aggravate the evil of which they so much complain—to wit: excess of production. They are now ruined by large crops, *because they persist in maintaining a system that forbids consumption to increase*, and they pray for short crops, because they then grow rich. Under such circumstances, we can scarcely recommend the adoption of this new plant, but we shall assuredly do so whenever they determine to adopt the measures necessary for bringing the spindle and the loom to their own cotton fields, for then the complaint of over-production will cease to exist.

"A NEW COTTON PLANT.—The editor of the *New-Orleans Orleanian* has seen a boll of cotton which deserves the attention of cultivators, on account of its growth and early maturity. On the 1st of June last, a lady planted in her garden a few cotton-seeds presented to her by a gentleman; on the 25th of July, a boll was ready for picking; and, at the end of sixty days from the time of planting, the cotton had arrived at maturity; being in less than one half of the time it takes the species now raised by our planters to do so. The lady was totally unacquainted with the cultivation of the great Southern staple. The seeds were introduced by Mr. Hayams, from Yucatan, and are styled the Alica."

THE OX.

THE native country of the ox, reckoning from the time of the flood, was the plains of Ararat, and he was a domesticated animal when he issued from the ark. He was found wherever the sons of Noah migrated, for he was necessary to the existence of man; and even to the present day, wherever man has trodden, he is found in a domesticated or wild state. The earliest record we have of the ox is in the sacred volume. Even in the antediluvian age, soon after the expulsion from Eden, the sheep had become the servant of man; and it is not improbable that the ox was subjugated at the same time. It is recorded that Jubal, the son of Lamech, who was probably born during the lifetime of Adam, was the father of such as have cattle.

The records of profane history confirm this account of the early domestication and acknowledged value of this animal, for it was worshipped by the Egyptians and venerated among the Indians. The traditions of every Celtic nation enrol the cow among the earliest productions, and represent it as a kind of divinity.

The parent race of the ox is said to have been much larger than any of the present varieties. The Urus, in his wild state, at least, was an enormous and

fierce animal, and ancient legends have thrown around him an air of mystery. In almost every part of the Continent, and in every district of England, skulls, evidently belonging to cattle, have been found, far exceeding in bulk any now known. There is a fine specimen in the British Museum; the peculiarity of the horns will be observed, resembling smaller ones dug up in the mines of Cornwall, preserved, in some degree, in the wild cattle of Chillingham Park, and not quite lost in our native breeds of Devon and East Sussex, and those of the Welsh mountains and the Highlands. We believe that this referred more to individuals than to the breed generally, for there is no doubt that, within the last century, the size of the cattle has progressively increased in England, and kept pace with the improvement of agriculture.

We will not endeavor to follow the migrations of the ox from Western Asia, nor the change in size, and form, and value which it underwent, according to the difference of climate and of pasture, as it journeyed on toward the West, for there are no records of this on which dependence can be placed.—*Youatt and Martin on Cattle.*

POPPY OIL.

We have desired to call the attention of our readers to the fact that they it is that must pay the cost of transportation, and that whatever tends to increase the distance between the consumer and the producer tends to increase that cost, and to impoverish themselves, producers of the fruits of the earth. We have also desired to show them that, by reason of not making a market on the land for the products of the land, they are constantly selling off the soil and impoverishing the land, and consequently impoverishing themselves. Further, we have desired to show them that the laborer must pay the cost of transporting his labor to the place at which it is needed, and that when that cost is greater than the value of the labor, it is wasted, as is seen to be the case in Ireland, where more labor is wasted for want of a demand for it than would pay, twenty times over, for all the cloth and iron consumed in the kingdom.

Were it possible now to ascertain the amount of loss to the farmers and planters of the Union, resulting from the absence of a market on the land for its products, it would be found that, *in each of these ways*, the loss is far greater than the value of the cloth and the iron they consume; and yet these are but a portion of the modes of loss resulting from the absence of that contraction of action which results from bringing the loom and the anvil to the side of the plough and the harrow. The man who has no market for potatoes must raise wheat, and yet he could obtain ten bushels of the one in return for little more labor than is required for one of the other; and the man who cannot sell corn or turnips or cabbages must limit himself to cotton, of which he obtains from an acre no more pounds than of turnips he could have bushels. Here is another and enormous source of loss, and yet this is but another of the almost thousand reasons why land is valueless and its owners poor where no market is made at home, and land valuable and its owners rich where such a market exists. Diversity of employment is essential to the productiveness and value of labor, and diversity of production is indispensable to the value of land and the prosperity of its owners, but the latter cannot exist without the former. Among the various suggestions for diversifying the employment of land and labor, we find in one of our exchanges the annexed in regard to the cultivation of the poppy, which will be found, as we think, highly useful when-

over our readers shall arrive at the conclusion that the land they have cleared is to be kept in heart, and not exhausted, and that the house they have built is to be kept in order for their children and their children's children, and not to be abandoned as soon as they shall have exhausted their capital by taking from the land all the soil, returning to it none of the refuse of its products:

"OIL FROM POPPIES.—In Switzerland, large fields of the poppies are cultivated, not for the purpose of making opium, but oil. From the poppy a beautiful transparent oil is made, which is extensively used in house-painting. It is almost as colorless as water, and possesses so many advantages over flax-seed oil that it may ultimately supersede that article. Where flax cannot be grown, poppies can be, in poor sandy soil. Linseed oil is becoming dearer, and the demand for paint is increasing. With white lead, poppy leaves a beautiful surface, which does not afterwards change, by the action of light, into a dirty yellow."

BUYING IN THE CHEAPEST MARKET.

THE following passage, which we take from the speech of Mr. G. F. Young, elsewhere referred to, is worthy of the consideration of our readers. It is a remarkable fact that the most strenuous advocates of *British* free trade are every where throughout this country to be found among those classes who produce nothing, but "merely consume the produce of labor." Every where the laborer asks for protection; but every where the annuitant, the receiver of interest, the officers of insurance companies, and others who live on salaries, ask for *British* free trade. If our readers desire to understand the reason of this, they may have it by reference to the London *Times*, the great advocate of the system, which tells its readers that "*cheap labor is good for those who have money to spend.*" It says nothing, however, of its effects upon those who have money to get and labor to sell, as is the case with most of our readers.

"He (Mr. Young) could quite understand that cheapness might be an exceedingly good thing to Lord John Russell and the other Cabinet ministers. It was also a very good thing to the fundholder, to the army and navy, to annuitants of all kinds, and *to every class in the state who produced nothing, but merely consumed the produce of labor.* But if we were to have the cheapest-market principle carried out, he did not see *why we should not go to the cheapest market for statesmanship.* (Loud cheers.) And if we went into the cheapest market, say for the cheapest Colonial Minister—taking quality into account as well—the cheapest Chancellor of the Exchequer, and the cheapest President of the Board of Trade, he very much doubted whether we should not be able to get quite as good an article as my Lord Grey, (hear, hear, and laughter,) as Sir Charles Wood, (cheers,) or as Mr. Labouchere, (renewed cheers,) at a very much cheaper rate than we had to pay for the services of these gentlemen. (Loud cheers and laughter.) Did they suppose that an intelligent and reflecting public would not have considerations like these brought home to their minds? Ay, and they would point a little higher than that, too! (Cheers.)"

Had the nation gone to the cheapest market for a Secretary of the Treasury, it can scarcely be doubted that it could have found a better one than Mr. Walker, at less than half the cost.

THE APPLICATION OF ANTHRACITE COAL TO IRON-MAKING.

THE *London Mining Journal* contains many communications of great value relative to the adaptation of the Welsh and American anthracites to the manufacture of iron. Various other scientific works devoted to metallurgy and the useful arts have referred to the same improvement. Among others, it has formed the subject of an elaborate treatise published in Paris by M. Michael Chevalier, in 1840. In Pennsylvania, the process of iron-making with anthracite coal has become quite common, and the difficulties that for years seemed

almost insurmountable, now appear to have been entirely overcome. The anthracite iron of South Wales sustains a very high reputation in Great Britain. Mr. Mushet, a distinguished manufacturer of England, gives a decidedly favorable testimony in regard to cold-blast anthracite pig-iron. After having concluded a series of most elaborate experiments, he remarks: "It is hence abundantly evident that the pig-iron now making, with cold-blast and anthracite, at the Ystalyfera iron-works, exceeds greatly in strength, in deflective powers, and capacity to resist impact, any iron at this time manufactured in the United Kingdom."

The anthracite district of South Wales is rapidly rising into importance in the production of iron. In 1847, there were no less than nine establishments, possessing thirty-two furnaces, in Swansea valley. Ten years previously, there was only *one* in operation. In September, 1847, *twenty-three* of these furnaces were in blast, making 1,150 tons of iron per week, or 59,800 tons per annum.

Let our iron manufacturers be properly encouraged by Government, and in this country the immense advantages possessed by Pennsylvania, New-Jersey and some other States will be improved, and their abundant resources in mineral wealth will be a rich treasure to the nation.

For the Plough, the Loom, and the Anvil.

BATHING-ROOMS ATTACHED TO DWELLINGS.

When we consider that there are more than "three hundred thousand millions of pores in the glands of the skin which covers the body of a middle-sized man," and when we take into contemplation that more than one half we consume passes off through the pores of the skin, we ought to realize the vital importance of keeping the surface of our bodies freed from foul and noxious matter. No one can enjoy as good health with the pores of his skin clogged up, as he could were he to practise bathing prudently and agreeably to the laws of discretion. When the evacuation of the juices of the body is impeded, and when the surface of the skin becomes dry, greasy and dirty, if these things are not attended to, and if the effete matter is not removed from the surface of the body, fever must inevitably set in, however slight. By removing the impurities of the skin, and by using cold or tepid baths, as the case may require, a healthy action is produced, perspiration is promoted, and the appearance of the complexion is improved more than twofold. All the cosmetics exposed for sale on Broadway, will not give that glow to the countenance which water will impart to it when freely used in connection with some simple cleanser. In fact, water has been resorted to in almost all ages of the world, as a fluid for removing the dead matter which accumulates on the skin; and "even Homer mentions the use of the bath as an old custom."

But I did not commence this article with the intention of expatiating at large, relative to the benefits which flow from bathing. The subject which I wish to advert to is in relation to the importance of having bath-rooms connected with dwellings. The extra expense of adding bath-rooms to domiciles, is nothing in comparison to the benefit that would be derived from them if they were used as frequently as they ought to be. The greater portion of the farming community, and in fact many others who erect dwellings, do not think so far as to simply add a bathing-room to their houses, an addition as necessary as a bed-room or parlor. A bathing-room built on the plan of a bed-room, answers very well for bathing purposes. We have "our" apartment for bath-

ing arranged in such a manner, that it will answer both for a wash-room and bath-room. It is next to the kitchen, so that in the winter season, when the weather is cold, the warm air has free access to it, thus making it both comfortable and commodious. We have a mat made in the following manner to catch the water that slops out of the trough, or pail, or whatever it may be, while engaged in bathing: Take four yards of cotton cloth, or enough to make a mat five feet square; sew it together strongly, with a piece of rope about half an inch in diameter surrounding the edge, to prevent the water from running off; then paint it several times, so it will be water-proof, and you have a complete mat for bathing. When ready to bathe, you only have to place your mat nicely on the floor, and at once commence operations. When through washing, take the mat by the corners and empty the slop water into the pail, and you are done, every thing looking "bran new" and as slick as a parlor, in the room.

W. TAPPEN.

Baldwinsville, N. Y., Nov., 1851.

CALIFORNIA COWS AND POTATOES.

ONE of the best letter-writers from California is Winchester, the correspondent of the *New-York Tribune*. From his last we gather a couple of interesting items for our farmers:—

"A few days ago I sat down to dine with ten others, mostly adults. A large dish of potatoes graced the table, cut in pieces before boiling. Our landlady informed us that there were two potatoes in the dish, and no more. But there was enough and to spare. On another dish was one third of a beet. Onions often exceed a pound in weight. A cabbage at the door of a restaurant near me weighs twenty-eight pounds. These vegetables are not the result of forced culture. The soil, in many localities, can't help producing them. Very little attention is paid to tillage, and no manure is employed. I am informed that some of the gardeners in this vicinity are applying manure, but I have not seen a load of that commodity in California.

Butter is retailed at 50 to 75 cents. A very small quantity is yet produced in the country. Those who raise cows can better sell the milk at 50 cents a quart, if they live near a market. The native cows are poor milkers. They are large, masculine-looking animals, and being generally allowed to retain their calves for six months or longer, they do not willingly submit to the regulations of the dairy. It requires two or three men to milk a California cow. They set to work on horseback, and first lasso her and tumble her to the ground. They tie her head to a post, and then bind her feet together tightly in pairs. One of the men does the milking, while another holds the bucket, the terrified animal enduring the process with the same docility as a cross baby exhibits while its dirty face is scrubbed. One or two quarts of milk are the result of the operation."

COMSTOCK'S SYSTEM OF TERRA CULTURE.

WE have recently had a confidential interview with Mr. Comstock, and are fully satisfied that those who adopt his system will reap a much better crop than those who do not.

His system is founded on a law of nature, as certain and as unerring in its consequences as any other natural law; and in his lectures he directs his hearers to such an application of the principle of this discovery as is sure to

secure the desired result. This is the law in nature which he claims to have discovered; and his hearers are generally convinced of the truth of Mr. C.'s position, from having *blundered* upon its application, without knowing that they were acting upon the principle of a universal law, which is applicable to the culture of all vegetable substances. His system embraces this and other important discoveries in the vegetable kingdom.

We have seen the most flattering testimonials of those who have attended his lectures, given by gentlemen whose scientific knowledge, no less than their experience and standing in the community, forbids the idea that they would lend the influence of their names to the endorsement of any thing that did not possess substantial merit.

THE COTTON PLANTERS' CONVENTION AT MACON.

This Convention assembled at Macon, Ga., on the 27th of last month, and was well attended by several hundred delegates of distinguished influence and moral worth from a number of the Southern States of the Union. The results sought to be accomplished by it we have heretofore stated. They do not seem, however, to have realized the expectations that were raised, as no definite object—certainly none of very great moment—was reached by the Convention. Nevertheless, we rejoice that the Convention has been held, as it has called public attention to the importance of the subject under contemplation, and awakened an interest on behalf of cotton growing which will not slumber, until something is done that shall be satisfactory to the planters.

Meanwhile, we are forced to a repetition of the sentiments expressed in our last respecting the evils under which our friends of the South are groaning. Import the consumer, and cease to export the staple; let the cotton factory spring up in the immediate vicinity of the cotton fields; create a market for the products of the land on the land itself; and at no distant day the evils of which our Southern friends now so loudly and justly complain would disappear like mists before the sun. With plenty of manufactories, and a sound protective tariff by Government, the Southern States would soon take a position of unequalled prosperity and independence. We believe they must finally come to this point as a remedy for their evils; and believing it, we shall continue to advocate it until new light opens before us.

THE LESSONS OF THE SEASON.

To the industrious and observing farmer, every season of active vegetation conveys many an important lesson, which has a direct bearing upon his future operations. Nature deals faithfully with the farmer. Wherever he has done well, she has justly applauded and rewarded; and she has also as faithfully rebuked and punished him for his errors, his ignorance and inattention. The results of his labors for the season are now, in a great measure, manifested. The principal crops have been gathered in, and the yield and quality of them have generally been in accordance with the labor and care bestowed, provided all has been adapted to the requirements of nature. Theories have been tested; those that were founded in truth, and have been judiciously reduced to practice, have been brought to a successful issue; while those that were erroneous have resulted in failure and disappointment. It is true, however, that many theories and practices require more than one season to test them thoroughly.

The business of most farmers is in a certain degree experimental. Every

experiment which the farmer tries may be regarded as a question proposed, which nature answers in accordance with her unvarying laws. Some of these questions may be simple and oft-repeated, yet the answers are always the same. These experimental questions may take the following forms: Can we raise profitable crops, on exhausted land, with little or no manure? What is the benefit of lime, plaster, ashes, muck, and the different manures, when applied to soils for the use of the crops? These and a thousand other questions have been proposed in the various operations of the season, and the answers have been in the bountiful and the stinted harvests, in the thriving and sickly plants, and in the general success or failure that has attended the labors of the husbandman—answers various, yet reliable and instructive, when viewed aright in all their bearings and connections, and all pointing to a more wise, consistent and profitable practice in the future. What has been accomplished this year, will be accomplished again under precisely similar circumstances, of course making due allowance for the peculiarities of the season.

The success or failure which has resulted from the methods practised in the treatment of the soil and the cultivation of plants, constitutes the lessons of the season. Among our agricultural readers these lessons have been many, and some of them, we doubt not, in the case of nearly every individual, are of considerable value and of general interest. Statements of success and failure, and what has contributed to each, may be mutually interesting and profitable to our readers. The evenings are now conveniently long, and will afford opportunity for thought and investigation; and we hope many of our readers will early write out for our columns some of the lessons from their own experience, and send them to us for publication. There is material enough among them for many an interesting chapter. Who will make a beginning? So says the *Maine Farmer;* and so say we.

BEES.

In many sections of the country the bees have stored up but little honey this season, and the late seasons are generally short of stores for winter. It is important to attend to such families before severe cold weather sets in. I do not recommend "taking up" or destroying these weak families, without honey; because we gain nothing by such a course, even admitting that they die of famine before spring, unless it be some few ounces of honey that may be in the hive. My plan is to feed them. I take a small tin pan, say eight inches long by six inches wide, and two or three inches deep, made with the sides perpendicular. I then take a thin piece of wood and make a float to fit the inside. This float I perforate with holes, as close as possible, that will not admit a bee to pass through. I use a heated iron, and burn them out, after having first made small holes with an awl. Or you may run a saw through the float to within an inch of the centre, from both ends; then shave out the interstices made by the saw, on both sides, so that the honey will pass through easily. The pan is then filled with liquid honey, or syrup made of cheap brown sugar, and the float set upon it. Place the pan in the chamber of the hive, with a pane of glass in front to admit the sun, and the bees will come up and carry the contents of the pan down, and store the honey in their combs. You can place the pan under the bees, if the hive is not filled with combs; and if filled, place a *vadir* under it, to raise it to receive the pan. In such case, you should contract the entrance to the hive so that but one or two bees can pass at a time, to prevent robbing, and see that the hive sits down tight on

all sides upon the vadir, or the floor board. A tight wooden box will answer all the purposes of a tin pan. During the warm days of November you can thus feed your bees enough to carry them through the winter. If you put the pan into the chamber of your hive, (if it has one,) you should trail the bees to the honey at first, by a few scattering drops, rapping on the side of the hive at the time, to cause them to ascend. T. B. MINER.

Clinton, N. Y.

WINTER WHEAT IN MAINE.—With a soil so much inferior to Illinois and Wisconsin, Maine has only this advantage to compensate—a long, snowy, dreary winter. They have raised over a million of bushels in that old rocky, frozen State, this year, principally from fall-sown wheat. This has stimulated a great change among farmers. The amount sown this fall will be nearly doubled; and if the yield is as great next year as this, (from twenty to thirty bushels per acre,) Maine will nearly supply herself. The only reason to fear is, on cold and clayey soils, in an "open" winter. So there is some use in snow.—*Galena Advertiser.*

The furnaces of Maine are closed, and the people who but recently were therein employed in making iron while consuming food, now employ themselves in raising food. The mills of Maine are gradually being closed, and there exists no demand for labor to be applied to building new mills; and those who lately built mills or made cloth while consuming food, now raise food for themselves. The amount sown this year is nearly doubled, and next year Maine, as we are told, will nearly supply herself. But what will then become of the food-raisers of Illinois and Wisconsin—the men who, driven from the mills and furnaces of the East, and from the mills, the furnaces, and the mines of the Middle States, have been compelled to resort to agriculture as the only means by which they might obtain subsistence for themselves and their families? The market of Europe is closed against them, except at prices so low as to be ruinous; and what are there the prospects, may be seen by the following extract from one of the most recent reports on the grain trade of England:—

"Since the repeal of the corn laws up to the present period, the supplies have constantly been in excess of the demand, and the markets have almost always labored under great pressure. This was the case throughout the year 1850, and, with a very deficient harvest, we had low prices and superabundant supplies."—*Mark Lane Express, Oct.* 25.

Our farmers are every where employed in converting consumers of food into producers of food, and the day is not far distant when they will pay dearly for this experiment in *British* free trade, by which is meant the subjugation of the planters and farmers of the world to the will of the Manchester political economists, the Millocracy of England.

NEW BOOKS.

An American Dictionary of the English Language. By NOAH WEBSTER, LL.D. Springfield, Mass.: Published by Charles and George Merriam.

Few men have left behind them so noble and enduring a monument as this magnificent system of the English language, as published by the Merriams in their quarto edition. The long life and profound scholarship of Dr. Webster are here embalmed and preserved to the world in a form in which they will become still more familiar to the rapidly increasing millions of our own country, as well as to all who speak the English language in every part of the globe. This volume contains the latest revisions, corrections, and additions of the author, with an introductory dissertation on the origin, history, and connection of the languages of Western Asia and Europe, with an explanation of the principles on which languages are formed, by Dr. Webster. To the work, and an invaluable portion of it, are added tables, giving the pronunciation of Greek and Latin proper names, Scripture names, and between three and four thousand geographical names, with a memoir by Professor Chauncey A. Goodrich, of Yale College.

This dictionary of the English language is not merely a complete treasury of philologi-

cal knowledge; it is a universal cyclopædia of science and art. It gives brief descriptions of every object of natural history, sufficient to enable the inquirer to understand the terms employed in its every department; and the accurate definitions of these terms are alone worth the price of the volume.

As a standard reference book, as a splendid triumph of industry, as a magnificent legacy to the world, as an enduring temple of ripened scholarship, and as a literary work which will ever be worthy of our national fame, Dr. Webster has left behind him a Dictionary that will only make his own name more illustrious and honored as new millions will win light and learning from this ample volume. No man should be without it—no man would be, were he sensible of its worth, and able to purchase it.

The Geological Observer. By Sir Henry De La Beche, C.B., F.R.S., &c. Philadelphia: Blanchard & Lea. 8vo. pp. 700. 1852.

The widely and rapidly extending interest in the yet young science of geology is evidenced by the frequent publication of valuable and costly octavos and quartos, reports and transactions, elementary treatises and manuals. We have been gratified, as well as somewhat surprised, to note the quick succession in which one volume after another has been announced during the last two or three years. We accept it as one of many tokens that there is a growing taste for the physical sciences and the study of natural history among our people; and no one is of more practical value than geology, so comprehensive and universal in its several departments. The agriculturist and the miner, the manufacturer and the merchant, with every branch of industry, may be more or less affected by the developments which this important science may make. The multiplication of able and scientific men, in every walk of life, will be an advantage, the results of which can scarcely be estimated. The value of geology to agriculturists, miners, engineers, and capitalists, is too lightly felt, but is coming to be better understood.

The volume of which we have given the title above is the production of a celebrated and most laborious and competent geological observer. Other authors, of as high a rank as Lyell, Buckland, Bakewell, Cuvier, Mantell, Murchison, and others, on the Continent, have given the world the results of their studies and their labors. The facts and principles of the science have grown to a massive system of natural truth. But the author of this volume, conscious as have been other geologists of the liability to form erroneous conclusions from many of the appearances presented in the geological field, and the retardation which the science may suffer from this cause, has produced an invaluable guide-book, by which the observer may learn the path to truth and accuracy in his investigations. The fulness of the work leaves nothing to be desired in the present condition of the science. The long experience of Sir Henry De La Beche, his scientific and general knowledge, and his ability to analyze facts and principles, have enabled him to give the geological student a masterly system of practical, working geology, which no lover of the hammer and chisel will be long without. It is such a work as is demanded by the wide class of young men who are directing their attention to this field; and we rejoice that the task of teaching the student how to become an accurate "geological observer" has fallen into hands so capable, and whose elegance and clearness as a writer have made a work of great general as well as scientific value.

The publishers have been liberal in the mechanical and artistical departments. The volume is itself an addition to the library, while the beauty of the illustrations is highly creditable to the artists. No work on geology we have ever seen is more finely embellished with letter-press engravings.

The Practical Cotton Spinner and Manufacturer: The Managers', Overlookers', and Mechanics' Companion. By R. Scott. Corrected and Enlarged, with Plates of American Machines. By Oliver Byrne. Philadelphia: Henry Carey Baird. 1 vol. 8vo. pp. 416. 1852.

Charles Scribner, publisher, Brick Church Chapel, Nassau street, has laid on our table the above work, which we cannot describe better than by quoting the remainder of the title in full:—"A comprehensive system of calculations of mill-gearing and machinery, from the primary moving power, through the different processes of carding, drawing, stubbing, roving, spinning, and weaving, with the recent improvements in machinery. To which are added, compendious tables of yarns and reeds for silk, linen, worsted, and wool." These calculations are full, and worked out in almost every instance. The speed, the amount of raw material required, the waste of material, the machinery in all its combinations, and every calculation necessary in the branches of industry named in the title, are given, and it must be a work indispensable to all interested in the loom or the mill.

The name of the editor, OLIVER BYRNE, has become too widely known to require any commendation at our hands.

The Mechanic's Assistant. By D. M. KNAPEN, A.M. New-York: D. Appleton & Co., 200 Broadway. Philadelphia: Geo. S. Appleton, 164 Chestnut street. 1 vol. 12mo, pp. 276.

In this comprehensive hand-book of the mathematics of mechanics, the practical workman has a valuable "Assistant." It is a "thorough practical treatise on mensuration and the sliding rule," and teaches "the manner of drawing all regular superficies, and the most concise methods of finding the areas of all regular superficies, and the contents of all regular solids, both by numbers and by the sliding rule." It also treats of "the laws of motion, descent of falling bodies, strength of materials, the mechanical powers, the elasticity and force of steam, specific gravities, levelling, and the pendulum," and gives, in a compact form, all the important mathematical principles required by the mechanic. Could such volumes as these be placed in the hands of our working-men, to be carefully studied, the effect would soon be made apparent in the standing and position of the laboring classes. The price of the volume is such that it is within the reach of any journeyman who has a desire to become a scientific and intelligent mechanic.

Elements of Geology. For the use of Students. By SAMUEL ST. JOHN. New-York: George P. Putnam, 155 Broadway. 1 vol. 12mo, pp. 321. 1851.

This admirable treatise on geology, by Professor St. John, who fills the chair of Chemistry and Geology in the Western Reserve College, is the latest and freshest manual for beginners which the demands of the science have called into the book-market. It is necessary, in the youthful ardor of geology, while observers are multiplying, facts are accumulating, and principles, doubtful or erroneous, are giving way before them, that the most recent and leading facts and principles should be embodied in new text-books for the students who are taking their earlier lessons in this delightful but laborious school, and who are to be the discoverers and teachers of the new generation, which shall unfold such vast stores of facts in the wide world yet unknown to the geologist. This very excellent work by Professor St. John makes no pretensions to originality of facts or principles; it is what it simply professes to be, an elementary treatise, in which the latest contributions to geology by Mantell, Murchison, Lyell, Agassiz, and our own honored Hitchcock and Dana, and State surveyors, have been carefully chiselled, and the best and most important specimens placed in this newest cabinet for the examination of students. The book is very liberally, indeed, richly illustrated with accurate engravings, and being free from the higher technicalities of the science, is a desirable and very useful teacher. It will long hold a place as a popular work.

PERIODICALS, NEWSPAPERS, &c.

The *Knickerbocker*, the oldest and one of the best of our large monthlies, is gaining in public favor daily; especially since it has reduced its terms from $5 to $3 per annum. Every body knows that it is published by Samuel Hueston, 139 Nassau street, New York.

The *International Magazine*, by Stringer & Townsend, is astonishing the world with the richness and variety of its contents. The numbers are appropriately and beautifully illustrated; and though young comparatively, the *International* has attained a wide circulation. May it live a thousand years, and may its shadow never be less!

Harpers' New Monthly has become a household word amongst the reading community, and it is no disparagement of other works to say, that it richly deserves the enviable reputation which it has acquired.

The *Phrenological* and *Water-Cure Journals*, and the *Student*, by Fowlers & Wells, 131 Nassau street, are amongst the most readable, ably conducted, and cheap periodicals of the day. They are pioneers in the reform spirit of the age, and have attained a a circulation all over the Union which attests their universal popularity. For beauty of mechanical execution, they have but few equals, and no superiors. Terms, $1 each per annum.

The *Saturday Evening Post* and *McMakin's American Courier*, both known the world over, are really fine specimens of mechanical taste and beauty, and richly stored with literary matter of a merit which would do credit to any of the monthlies. They are of the largest class, neatly printed once a week on good paper, and are offered to clubs of twenty at only $1 per annum, if sent to one address! This must enable them to defy all competition, and to maintain the distinguished reputation they have so long held as models of American newspaper literature. Published in Philadelphia.

TOPICS OF THE PRESS.

Curing Corn-Stalks.—A correspondent of the *Maine Farmer* says: "I will tell farmers how I have managed to cure them in the best manner, with certainty, ease, and expedition, let the weather be what we term good or bad. In the first place, when I cut them I lay them on the corn, the butts highest; and then if it rains, no water will collect between the leaf and stalk. If placed in this manner, a long storm will injure them but very little. Secondly, I do not bind them until they are ready to take under cover; and then, instead of packing them away in a heap to spoil, I put them on the hay; and no barn can well be filled with hay so that there will not be room enough after the hay settles to spread all the stalks a 'down east' farmer will have. As soon as I get the stalks to the place of deposit, or on the hay where they are to remain, I cut the bands. This lets them lie loose, and they will dry perfectly. If they are dried some, they may lie a foot deep or more. If cured and cared for in this way, the cattle will eat all. They should, as a general thing, be given to cattle by way of change, as they soon set their teeth on edge, as sour apples do a person's. I have sometimes hauled them to the barn before they were much wilted, and set my barn floor full, setting them as upright as possible; always remembering to cut the bands and keep the doors open, when the weather is suitable."

Number of Farms in Thirteen States.—The following census statistics, showing the number of farms in the States enumerated, will be read with interest by the farming community:

New-York,	174,234
Pennsylvania,	127,733
Ohio,	146,821
Indiana,	101,973
Virginia,	76,704
Illinois,	71,062
Kentucky,	77,290
Maryland,	21,950
New-Jersey,	24,504
Delaware,	6,225
Michigan,	34,690
Wisconsin,	22,062
Iowa,	15,500

Preservation of Fat and Oils.—An article in the *Western Lancet*, by Dr. C. W. Wright, of Cincinnati, states that the hunters of Ohio, in ancient times, had a curious way of preserving their bear's fat from becoming rancid, by melting it along with the powder or fine shreds of the bark of the slippery elm, (about a drachm of the former to a pound of the latter,) and then straining it. The bark communicates an odor to the fat resembling that of the kernel of the hickory nut. Dr. Wright has subjected other fatty bodies, including butter and lard, to the same experiment, and in every instance, he states, with success. Butter thus prepared, he says, was, a year afterwards, as sweet and free from disagreeable odor as on the day it was made; a fact, if it really be a fact, of no mean interest to housekeepers and others.

Cannel Coal in Virginia.—A correspondent of the *Miner's Journal* furnishes the following particulars respecting the Virginia Cannel Coal Company. They will be found interesting:—

"The capital of the Company is $1,000,000. Their property is situated in Western Virginia, in Boone and Kanawha counties, and comprises 6,500 acres of land, held in fee simple, 5,000 of which are on Big Coal River, about 40 miles from its mouth, and the remaining 1,000 acres, *which are now being worked by the Company*, forms a tract some twenty miles lower down, having its principal frontage on Little Coal River, about 18 miles from its confluence with the Kanawha. Traces of cannel coal are found throughout the larger portions of Kanawha and Boone counties, varying in quantity and thickness from 6 to 50 inches.

"Coal River joins the Kanawha 48 miles from Point Pleasant, on the Ohio, which is 264 miles below Pittsburg, and 194 miles above Cincinnati, 2,028 miles to New-Orleans, and to Cleveland on Lake Erie, via the Ohio Canal, about 400 miles. The natural outlet for the Company's cannel coal is down the Coal and Kanawha Rivers to the Ohio, thence to Cincinnati, Louisville and New-Orleans to the sea-board. The Kanawha River is generally navigable when the Ohio is, say for eight months in the year—July, August, September and October being the dry months. The Company are now at work improving the navigation of Coal River by means of locks, dams, &c., so as to render transportation by means of it independent of accidental interruptions from freshets.

"Cannel coal is now used largely in the manufacture of gas; it also has certain advantages for steam purposes. The cost of mining and sending it to New-Orleans is about 10 cents per bushel or $3 per ton; to Cincinnati, Louisville and other points on the Ohio River, above the Falls, from 5 to 6 cents, or $2 a ton. The market-price in these different places cannot be established till a reasonable demand is supplied. Its

price in New-Orleans for the last 20 years has ranged from $8 to $15 per ton. It may now be estimated at $7 50 per ton, or 25 cents per bushel; 12 cents at Louisville, 9 cents at Cincinnati, and 7½ at Gallipolis."

SIZES OF SHOES.—The Lynn Directory for 1851 says, a size is the length of one "barley-corn," or one third of an inch. A size stick is thus formed: Take a rule or piece of pine wood thirteen inches in length, and divide it into thirty-nine equal parts, of one third of an inch each. The first thirteen are left blank, and counted nothing. The second thirteen are called children's sizes, The third thirteen are called men's and women's sizes; each marked from one to thirteen. Thus nine inches is a man's size, No. 1; ten inches is No. 4; eleven inches No. 7; twelve inches No. 10.

MEAN ANNUAL DEPTH OF RAIN FOR 4 YEARS.

(From Records of the Smithsonian Institution.)

Fort Constitution, N. H., -	Inches	28.85
Watertown Arsenal, Mass., - -		39.60
Fort Hamilton, N. Y., - - -		45.71
Hancock Barracks, N. Y., - -		35.92
Watervliet Arsenal, N. Y., - -		34.22
West Point, N. Y., - - -		48.70
Alleghany Arsenal, Pa., - -		28.14
Dearborn Arsenal, Mich., - -		31.30
Fort Brady, " - -		31.89
" Howard, " - - -		38.83
" Winnebago, " - -		31.88
" Snelling, Iowa, - - -		30.32
" Crawford, Wis., - - -		29.54
" Leavenworth, Mo., - - -		32.68
St. Louis Arsenal, Mo., - -		24.12
Fort Smith, Ark., - - - -		35.64
" Gibson, " - - -		30.64
" Towson, " - - - -		46.73
New-Orleans Barracks, La., -		51.85
Fort Wood, La., - - - -		47.90
Key West, Florida, - - -		31.39
Charleston, S. C., - - - -		33.89
Fort Monroe, Va., - - -		52.53
" McHenry, Md., - - -		40.80
Washington City, D. C., - -		34.62
Baltimore, (8 years,) - - -		39.90
Boston, (22 years,) - - - -		39.23
Hanover, N. H., - - - -		3.300
State of New-York, - - -		3 060

NEW STAPLES AT THE SOUTH.—A writer in the *Charleston Mercury* states that Mr. Bonynge has returned to that city, after a tour in Georgia, where he has met with considerable encouragement in his intentions to introduce the Tea, Indigo, Date, and Mango plants, &c., into the Southern Atlantic States. The correspondent adds: "His present wish is, to publish a work on the above staples, giving full instructions for their cultivation and manufacture. Besides this, the book will contain a vast deal of information on subjects interesting to all classes. However, beyond the cost of the book, which is $1, payable on delivery, the objects to which the proceeds are to be devoted are worthy of encouragement, viz.: the introduction into our State of several additional products of general consumption. Mr. Bonynge's book goes to show that Tea can be cultivated and prepared for market for three to five cents per pound. We are not prepared to state it can be, but it is very probable. Mr. Bonynge, from his long experience as a tea-planter and manufacturer, has good grounds for his statements, and will in his book advance satisfactory proof to substantiate them. Indigo, of which he treats very fully, is well worthy of a re-introduction; but our space will not allow us to enter at present more fully into the matter, but recommend to the attention of the public generally Mr. Bonynge, and wish him a hearty success."

FACTORIES IN LOUISIANA.—The editor of the *Louisiana Floridian* has lately been on a visit to Woodville, and has made an extensive examination of the manufacturing establishment at that place. He says it is now making 30,000 yards of cotton cloth per week. The factory is situated about a mile from the town, on the West Feliciana Railroad, and comprises one brick building, four stories high, which contains the whole apparatus for manufacturing. There are one engine, 80 horse power, 2 lappers and willows for preparing the cotton, 36 cotton cards, 2 drawing frames, 4 railway heads, 5 speeders, 1 batting card, 2 wool cards, 1 jack, 4,000 spindles, 2 spoolers, 2 rappers, 4 dressers, 80 looms, and all corresponding machinery calculated to do 38,000 yards per week. The whole erected and put into operation by Mr. J. D. Woodworth. The capital invested $75,000; profits when in full operation are about 50 per cent. The profits for one week were $472.51. The number of operatives is generally 125, at a cost of $4.25 per week. For the operatives, there are three brick buildings, two stories high, with a basement, seventy-five feet long. Each building contains four tenements.

AGRICULTURAL CAPABILITIES OF CALIFORNIA.—A correspondent of the *Newark* (N.J.) *Advertiser* states that the present season is rapidly developing the agricultural capabilities of California soil, and the climate is unsurpassed for the cultivation of fruits. What will Atlantic farmers think of such facts as these: seven bushels of wheat raised from two quarts of seed; or, as in the experience of Major Reading's farming in large harvests, an average of ninety-two and fif-

teen sixteenths bushels of wheat from one bushel of seed; or this: 800 bushels of potatoes from an acre of ground, and sold for over $2700? The excellence of the soil and markets are the inducements which offer themselves to the population of older countries to emigrate to California. For the improvement of the country, a population to occupy the mineral and agricultural regions, and to fill the work-shops with industry and sobriety, is all that is necessary.

A Moonlight Balloon Excursion.—A Paris paper of the 14th ult. gives an entertaining log-book of an aërial voyage recently performed by M. Eugene Godard and a half dozen companions, on a brilliant moonlight night. M. Godard was endeavoring to demonstrate his ability to steer the atmospheric ship as conveniently as one riding the water, and appears to have succeeded to a charm. He passed from one point of Paris and its environs to another, picking up his passengers, and stated, when he finally arose, to what points in the Department he proposed to travel, and fulfilled his promises with wonderful exactness. When passing over Clichy, at an immense height, the scene is described as one of fairy-like beauty. The moon was on the horizon; the heavens, entirely free from cloud or vapor, glittered with stars; and below, the different streets in the boulevards of Paris were distinctly protracted in long lines of light. At those *ganglia* of the city, the Place de la Concorde, the Palais Nationale, &c., the effect of the gas lamps was to produce an atmosphere dazzlingly phosphorescent, and perfectly magical in its intense coloring; and the elevated towers of Notre Dame, the columns and domes, stood out in dark relief from the glaring ground. After voyaging for some hours, the balloon descended at Garges, and the party traveled cosily and safely upon terra firma back to the city.

Richness of Copperdom.—The *Lake Superior Journal* of Oct. 29th, discloses some of the wonders and riches of the great Cliff Mine. The Mammoth Cliff Mine continues to outstrip all others in the country, and so far as native copper is concerned, all others in the world, yielding up its wealth at the rate of 90 tons a month of pure copper. Every foot that is sunk, and every fathom that is driven, brings to light new evidence of its unfailing richness. Mass after mass of the pure metal, from one to fifty tons weight, is taken from the vein, and every step through its long levels brings one to other masses, still standing and unmoved, of unknown size and value. The immense masses of pure metal coming from the prolific vein have astonished all who witnessed it. It has now been tested to the depth of 400 feet, and many hundred feet in length, and it still sustains the same rich character. It is every where as regular and well defined as any lode in Cornwall, and there is just as good a prospect of its continuance and of its improvement as ever. At the Cliff Mine, also, during the past season, many valuable surface improvements have been made, buildings erected, and lands and roads improved. The North American Mine, near the Cliff, is yielding richly. About 175 tons of copper were shipped from it this season. Some 165 men are employed. Several shafts have been sunk to the vein, the lowest of which is 335 feet in depth. The five levels are from 100 to 400 feet in length. The surface improvements at this mine this season are valuable. A 33 horse power lifting engine is being put in operation, in a fine engine house. The stamp works consist of eight stamp heads, carried by steam power, stamping about 80 tons per week. The Cliff vein runs on to the premises of the North American Company, and their uncompleted shaft to the vein is to be sunk immediately. It is now down 30 feet, and the vein is supposed to be from 80 to 100 feet below the surface.

Minerals in Pa.—Specimens of minerals have been found in lime quarries, near Norristown. The *Herald* says it is found mixed through a deposit of the most beautiful quartz rock ever seen, and very much resembles the rich treasures of the quartz rocks in California. Under the belief that it was something of the "same sort," a portion of the mineral was caused to be tested, when it was found to be a combination of silver and copper, with a large preponderance of silver. It is not found in large quantities yet, but the indications are that it is "about." and will be opened some of these days. In a section of country so remarkable for its known rich deposits as this portion of Pennsylvania, and so abounding in "indications," the discovery of silver, or even gold, would not be a matter of surprise to those who are acquainted with its geological formation.

Wisconsin State Cattle Show.—The *Madison Democrat* says: "The show was the first of the kind in the State, and was such as to astonish and delight the thousands of interested persons." There were great numbers of superior Durham, Devonshire, and native cattle; a variety of fine breeds of sheep, Merino and Pauler Merino Bucks, fine horses, fruits, flowers, vegetables, &c.

Ohio Tobacco.—The *Dayton Journal* estimates the present year's crop of tobacco in the county of Montgomery, as worth more than $100,000.

EDITORIAL AND SELECTED MISCELLANY.

The best route between Philadelphia and New-York is the Camden and Amboy. Good cars, attentive and gentlemanly conductors, low fare, and great speed, are only a few of the many advantages of this over the old route. . . . Persons travelling between New-York and Boston will, of course, take the Fall River route, of which Tisdall & Borden, 70 West street, are the agents. Such splendid boats, attentive waiters, sumptuous tables, and such beautiful and spacious saloons, must be enjoyed to be appreciated. In relation to this, as also the Camden and Amboy route to Philadelphia, we speak from experience. . . . There is a territorial law in Oregon prohibiting the bringing or coming of negroes into the Territory. In a recent case against one Vanderpool, brought before Judge Nelson, this law was enforced, and the negro banished from the State. . . . An Irishman said, if a few gooseberries give so fine a flavor to an apple pie, "that it would be a darlint of an apple pie which was made of gooseberries intirely." . . . During the whole period of the Exhibition, the bad money received amounted to £90 in silver and a half sovereign in gold. The half crowns were the most usual bad coin, and it is a noticeable fact that nearly all the bad money was taken on the half crown and five shilling days. . . . Iron buildings are rapidly increasing in Philadelphia. The uses of iron for building are only beginning to be appreciated. It is employed to a considerable extent in New-York city. . . . Late advices from England state that Charles Dickens is at present keeping his terms in the Middle Temple, for the purpose of becoming a barrister. . . . Kossuth expressed a fine sentiment in his address at Southampton, when he said, referring to his own sufferings, "But I will not look to the past for griefs, only for instruction." . . . The reason the whisking of a fiery stick produces a luminous circle, is because, from *excessive rapidity*, the rays from one point remain impressed on the retina of the eye, until the revolution completes the circle. . . . One third of the people of the United States live in towns and cities, of which there are no less than sixty-five which contain ten thousand inhabitants. . . . An Irishman, writing a sketch of his life, says he early ran away from his father, because he discovered he was only his uncle! . . . The *Philadelphia Ledger* describes a schooner being built in Taylor's shipyard, Camden, to have rotating masts, around which the sails are rolled, instead of being furled on yards. . . . Russia will be one thousand years old next year; and her thousandth birthday is to be celebrated with great splendor. Kossuth, probably, would rather go to her funeral. . . . The Virginians are talking about raising a monument to Capt. John Smith. If it is to be no higher than Washington Monument, we should like to contract for the work, provided all the John Smiths in the United States would only subscribe one dollar each. . . . The man who thought he could coax a lawyer to take "a dollar less," is now trying to set fire to an iceberg with a cigar. . . . La Fontaine appeared heavy, coarse, and stupid; he could not speak and describe what he had just seen; but when he wrote, he was the model of poetry. . . . The number of students at present at Yale College is 548. Of these, 34 are Theological students, 30 Law students, 27 Medical students, and 14 are students in Philosophy and the Arts. Of the literary societies connected with the College, the Lilonia has 174 members, and a library of 11,800 volumes. The Brothers in Unity have 206 members, and 11,725 vols.; and the Calliope has 63 members, and 7,500 volumes in their library. . . . It is estimated that over one hundred thousand stoves were made in Albany last year, and that full one hundred and twenty thousand will have been manufactured this year. . . . The American Institute, New-York, honored Mr. Steers, designer of the yacht America, with a gold medal for a model of that beautiful vessel. . . . "Now that it freezes, take care of your nose, that it does n't get froze, and wrap up your toes in warm woolen hose." The above, we suppose, was written in prose, by some one who knows the effect

of cold snows. . . . We learn that, before leaving Buffalo for the West, Jenny Lind made a present to that excellent artist, Salvi, of a very beautiful cigar case, of massive gold, and of exquisite workmanship. . . . Mr. McCormick, inventor of the American reaper, has contracted in England for the manufacture of five hundred machines, to be in readiness before next harvest, at which time he intends visiting England to dispose of them. . . . He who has good health is young; he is rich who owes nothing; and he is happy who takes a good newspaper. . . . The last Rhode Island Assembly got so far up with the spirit of the age as to abolish the barbarous law of imprisonment for debt. . . . It is proposed to erect a colossal statue to James Fenimore Cooper in one of the public squares in New-York city. . . . Corneille, in conversation, was so insipid that he never failed of wearying. He did not even speak correctly that language of which he was such a master. . . . Two thousand cocoons are necessary to make one pound of raw silk. . . . The coral grows like buds on a tree. . . . Seclusion from the world is unhealthy for mind and body. . . . As we proceed upwards from the earth, its attractions become weaker. . . . One thousand tons of tobacco are annually squirted over the face of creation, and twenty tons of ivory are worn out chewing the weed every seven years. . . . Holdricht's Statistical Almanac for the year 1852 estimates the number of newspapers published in the United States annually at 412,880,000, which would give sixteen and a half copies per year to every man, woman, and child. . . . Once give your passions the rein, and they become unmanageable. . . . An Irishman coming to Boston from Lowell, took the stage in preference to the cars, because, as he said, he could ride four times as long for the same money. . . . A speculator offers $25,000 for the right to pick up such lost articles as fell through the crevices of the floor in the Crystal Palace. The planks, it will be recollected, were left with a space between them. . . . Air, food, exercise, and cleanliness, are the four pillars of health. . . . Crystals of one body are always of the same form. . . . Addison was good company with his intimate friends, but in mixed company he preserved his dignity by a stiff and reserved silence. . . . One hundred cats were part of the cargo of a vessel which sailed recently for California. . . . The following patriotic toast was given by Colonel A. A. Adams, at the celebration of the Fourth, in Warren, Ohio: "Uncle Sam—the gentleman whose birth-day we now celebrate—with a family of thirty millions of handsome girls and boys, and land enough to give each a farm, and have plenty left for his grandchildren." . . . Mr. Ewbank, Commissioner of Patents, has received several specimens of wheat from the Salt Lake country. . . . In Boston, there are 350 persons who sustain themselves in a population of 130,000 by prescribing and giving medicine. . . . Good fences make good neighbors. . . . In 1813 the price of passage between New-York and Albany, by steamboat, was $7. . . . The Astor Library, now in the course of construction, is slowly progressing. It is in the Romanesque style of architecture. . . . Nothing sits so gracefully upon children, and makes them so lovely, as habitual respect and dutiful deportment towards their parents and their superiors. . . . Hon. Edward Dickinson, of Amherst, Mass., has grown some figs this year, which are represented to be equal to the Smyrna figs. . . . A fool, says the Arab proverb, may be known by six things: anger without cause, speech without profit, change without motive, inquiry without object, putting trust in a stranger, and not knowing his friends from his foes. . . . A beautiful specimen of the ostrich species lately arrived at Salem, Mass. . . . An invoice of gold dust was delivered in Liverpool by the Pacific in thirty-seven days from its shipment at San Francisco. . . . There were over 100,000 strangers in Boston during the "jubilee week." . . . It is estimated that the London Exhibition will yield a net profit of one million of dollars. The great questions now are, to whom does this money belong, and what shall be done with it? . . . Ninety students have entered the Brown University for the new term.